



FCC Radio Test Report

FCC ID: QISWS322

This report concerns (check one) : Original Grant Class II Change

Issued Date : Jan. 03, 2012
Project No. : 1212C061
Equipment : 1) 300Mbps Mini Wireless Router;
2) 300Mbps Wireless Rang Extender
Model Name : WS322
Applicant : Huawei Technologies Co., Ltd.
Address : Bantian, Longgang District, Shenzhen China
Manufacturer : Huawei Technologies Co., Ltd.
Address : Administration Building, Huawei Base, Bantian,
Longgang District , Shenzhen 518129, P.R.China

Tested by:
Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Dec. 11, 2012
Date of Test:
Dec. 11, 2012 ~ Jan. 02, 2013

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Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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1. CERTIFICATION

Equipment : 1) 300Mbps Mini Wireless Router; 2) 300Mbps Wireless Rang Extender
Brand Name : HUAWEI
Model Name : WS322
Applicant : Huawei Technologies Co., Ltd.
Date of Test : Dec. 11, 2012 ~ Jan. 02, 2013
Test Item : ENGINEERING SAMPLE
Standards : FCC Part15, Subpart C(15.247) / ANSI C63.4-2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1212C061) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C				
Standard	Section	Test Item	Judgment	Remark
15.207		Conducted Emission	PASS	
15.247(d)		Antenna conducted Spurious Emission	PASS	
15.247(a)(2)		6dB Bandwidth	PASS	
15.247(b)(3)		Peak Output Power	PASS	
15.209/15.205		Radiated Spurious Emission	PASS	
15.247(e)		Power Spectral Density	PASS	
15.203		Antenna Requirement	PASS	

NOTE:

- (1) "N/A" denotes test is not applicable in this test report
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v02 (Measurement Guidelines of DTS)



2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
 Neutron's test firm number is 319330

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
DG-CB03	CISPR	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	1) 300Mbps Mini Wireless Router; 2) 300Mbps Wireless Rang Extender	
Brand Name	HUAWEI	
Model Name	WS322	
Model Difference	N/A	
Product Description	The EUT is a 300Mbps Mini Wireless Router.	
	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 300 Mbps (2T2R)
	Number Of Channel	11 CH, Please see note 2.(Page 9)
	Antenna Designation	Please see note 3.(Page 9)
	Antenna Gain(Peak)	
	Output Power	802.11b: 20.17dBm 802.11g: 23.58 dBm 802.11n(20MHz): 26.14 dBm 802.11n(40MHz): 26.45 dBm
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	AC Mains.	
Power Rating	100-240V~50/60Hz 0.3A max	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2. CH 01 – CH 11 for 802.11b, 802.11g, 802.11n(20MHz)
 CH 03 – CH 09 for 802.11n(40MHz)

Channel List

Channel	Frequency (MHz)						
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
0	HUAWEI	101003WS 322A	Integral Antenna	N/A	0.94	TX/RX
1	HUAWEI	111003WS3 22A	Integral Antenna	N/A	1.0	TX/RX

Note:

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

- 4.

Operating Mode	1TX	2TX
TX Mode		
802.11b	V (ANT0 or ANT1)	-
802.11g	V (ANT0 or ANT1)	-
802.11n(20MHz)	-	V (ANT0 & ANT1)
802.11n(40MHz)	-	V (ANT0 & ANT1)



3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	WIFI

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 5	WIFI

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 802.11g mode: OFDM (6Mbps)
 802.11n HT20 mode : BPSK (6.5Mbps)
 802.11n HT40 mode : BPSK (13.5Mbps)
 For radiated emission tests, the highest output powers were set for final test.



3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

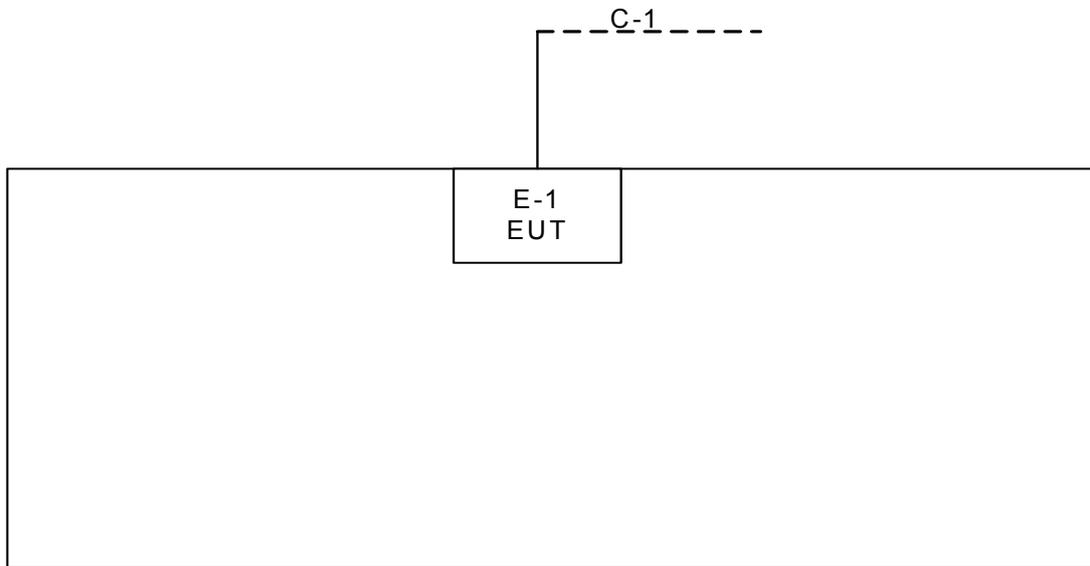
Test software Version	REALTEK 11n Single Chip USB WLAN NIC Massproduction Kit		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	17	17	17
IEEE 802.11g OFDM	14	17	14

Test software Version	REALTEK 11n Single Chip USB WLAN NIC Massproduction Kit		
Frequency (MHz)	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n (20MHz)	13	17	13
Frequency (MHz)	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	10	17	10



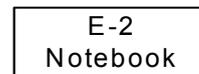
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Mode:

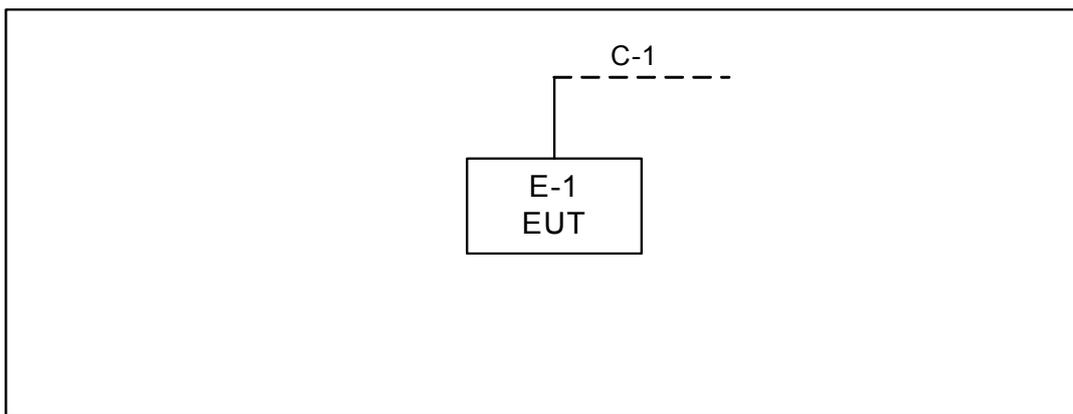


Control Room

C-1: RJ45 Cable



Radiated TX Mode:



C-1: RJ45 Cable





3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	300Mbps Mini Wireless Router	HUAWEI	WS322	QISWS322	N/A	EUT
E-2	NOTEBOOK	DELL	INSPIRON 1420	DOC	JX193A01SDC2	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in m in 『Length』 column.



4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	LISN	EMCO	3816/2	00052765	May.26.2012	May.04.2013
2	LISN	R&S	ENV216	100087	May.26.2012	May.04.2013
3	Test Cable	N/A	C_17	N/A	Mar.18.2012	Mar.28.2013
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	May.26.2012	May.04.2013
5	50Ω Terminator	SHX	TF2-3G-A	08122902	May.26.2012	May.04.2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

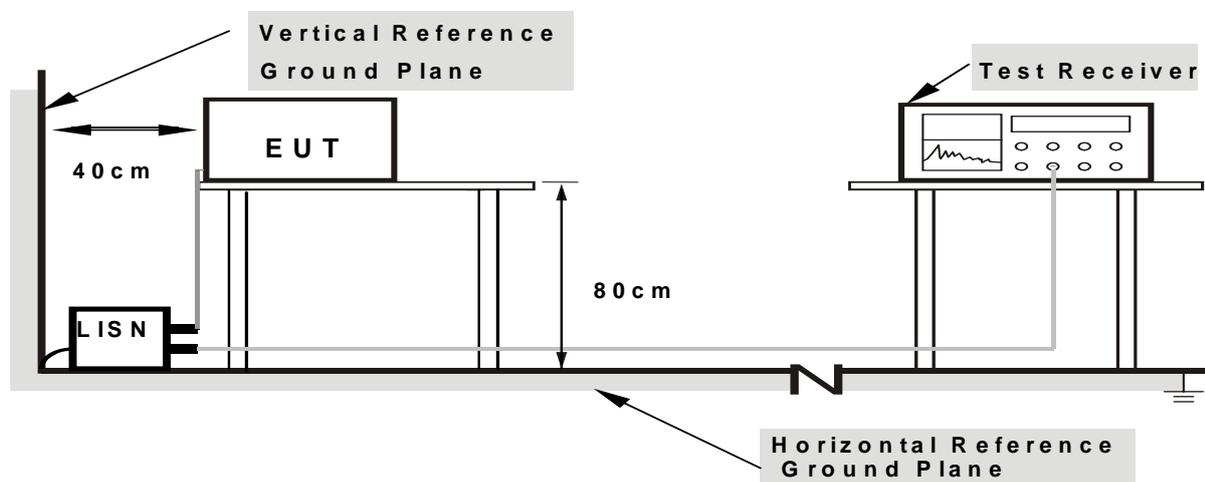
4.1.3 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



- Note:**
- Support units were connected to second LISN.
 - Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting mode.



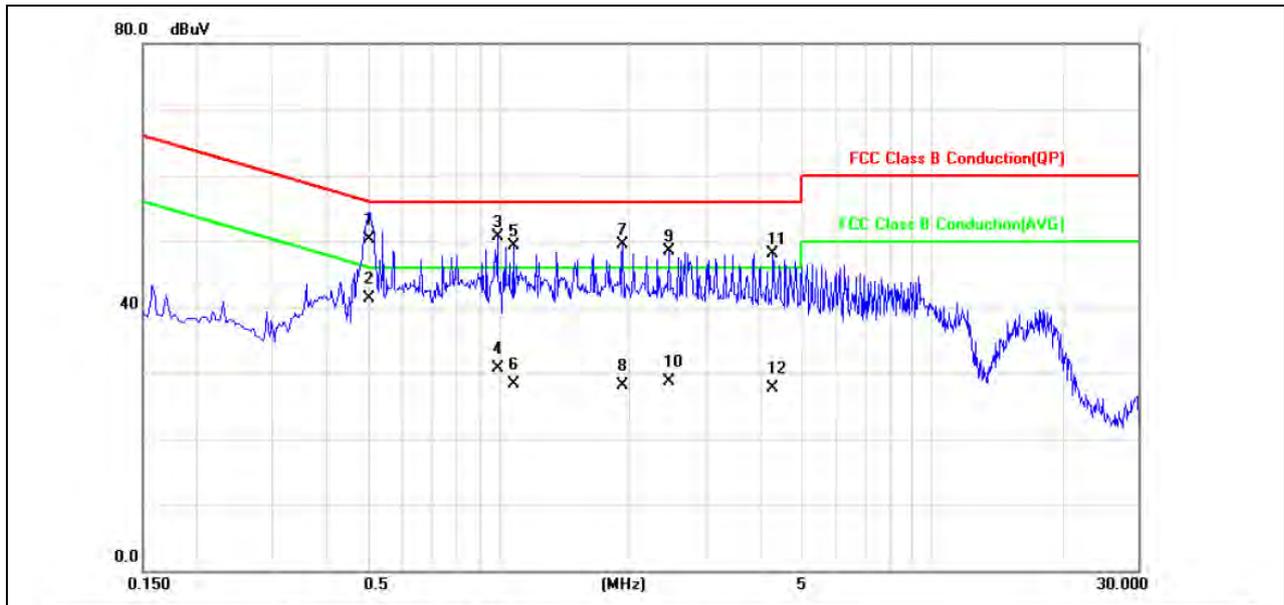
4.1.7 TEST RESULTS

Remark

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.



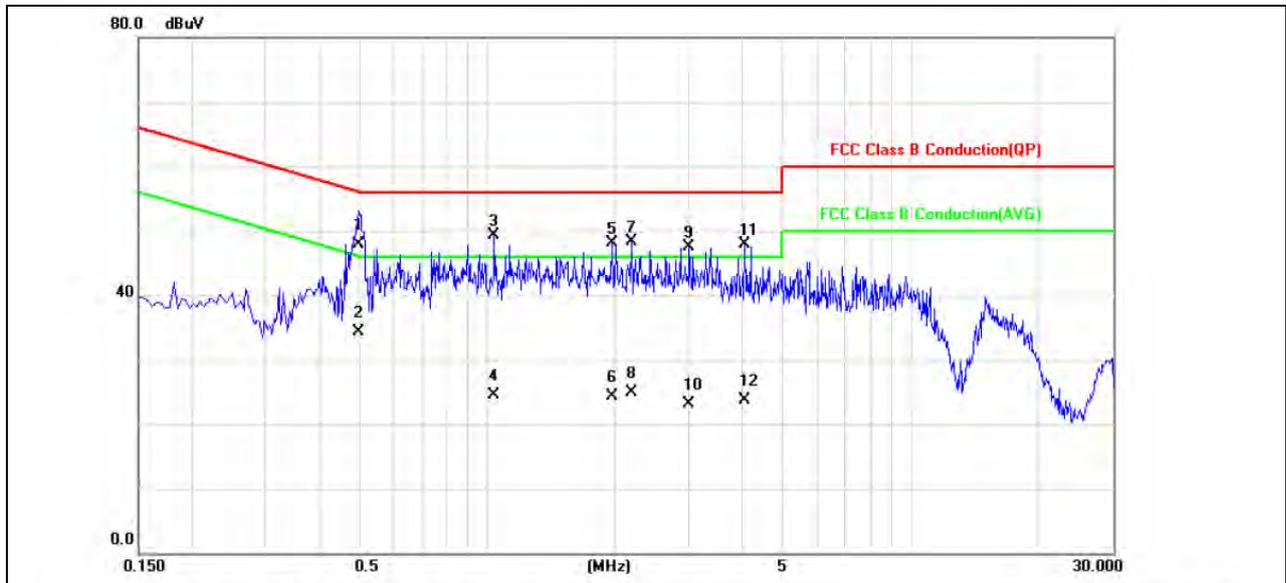
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	53 %
Pressure :	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	WIFI –Transformer:Ketc	Phase :	Line



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.5020	40.40	9.83	50.23	56.00	-5.77	QP	
2	*	0.5020	31.50	9.83	41.33	46.00	-4.67	AVG	
3		0.9940	40.96	9.82	50.78	56.00	-5.22	peak	
4		0.9940	20.90	9.82	30.72	46.00	-15.28	AVG	
5		1.0780	39.41	9.82	49.23	56.00	-6.77	peak	
6		1.0780	18.50	9.82	28.32	46.00	-17.68	AVG	
7		1.9380	39.60	9.88	49.48	56.00	-6.52	peak	
8		1.9380	18.30	9.88	28.18	46.00	-17.82	AVG	
9		2.4660	38.71	9.89	48.60	56.00	-7.40	peak	
10		2.4660	18.90	9.89	28.79	46.00	-17.21	AVG	
11		4.3020	38.20	9.92	48.12	56.00	-7.88	peak	
12		4.3020	17.80	9.92	27.72	46.00	-18.28	AVG	



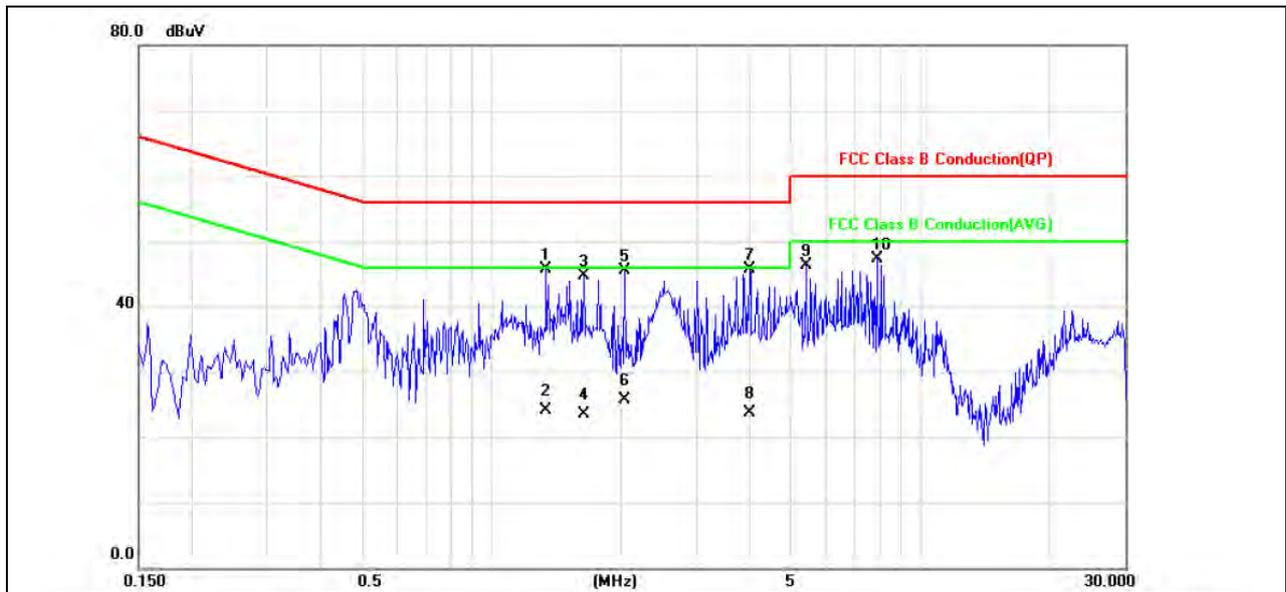
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	53 %
Pressure :	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	WIFI –Transformer:Ketc	Phase :	Neutral



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.4980	38.10	9.83	47.93	56.03	-8.10	QP	
2	0.4980	24.40	9.83	34.23	46.03	-11.80	AVG	
3 *	1.0420	39.40	9.87	49.27	56.00	-6.73	peak	
4	1.0420	14.70	9.87	24.57	46.00	-21.43	AVG	
5	1.9700	38.14	9.92	48.06	56.00	-7.94	peak	
6	1.9700	14.30	9.92	24.22	46.00	-21.78	AVG	
7	2.1900	38.47	9.92	48.39	56.00	-7.61	peak	
8	2.1900	14.90	9.92	24.82	46.00	-21.18	AVG	
9	3.0020	37.55	9.93	47.48	56.00	-8.52	peak	
10	3.0020	13.20	9.93	23.13	46.00	-22.87	AVG	
11	4.0580	37.87	9.96	47.83	56.00	-8.17	peak	
12	4.0580	13.70	9.96	23.66	46.00	-22.34	AVG	



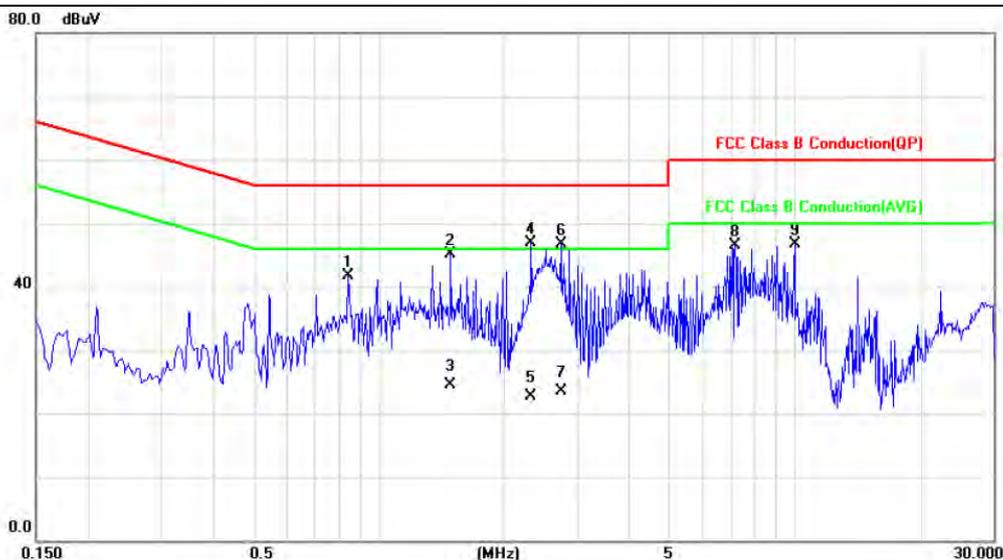
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	53 %
Pressure :	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	WIFI –Transformer:MOSO	Phase :	Line



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	1.3380	35.88	9.84	45.72	56.00	-10.28	peak	
2	1.3380	14.20	9.84	24.04	46.00	-21.96	AVG	
3	1.6380	34.88	9.86	44.74	56.00	-11.26	peak	
4	1.6380	13.60	9.86	23.46	46.00	-22.54	AVG	
5	2.0340	35.61	9.88	45.49	56.00	-10.51	peak	
6	2.0340	15.90	9.88	25.78	46.00	-20.22	AVG	
7 *	4.0060	35.82	9.92	45.74	56.00	-10.26	peak	
8	4.0060	13.80	9.92	23.72	46.00	-22.28	AVG	
9	5.4060	36.34	9.94	46.28	60.00	-13.72	peak	
10	7.9340	37.21	10.03	47.24	60.00	-12.76	peak	



EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	53 %
Pressure :	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	WIFI –Transformer:MOSO	Phase :	Neutral



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.8460	31.86	9.84	41.70	56.00	-14.30	peak	
2	1.4900	35.21	9.89	45.10	56.00	-10.90	peak	
3	1.4900	14.60	9.89	24.49	46.00	-21.51	AVG	
4 *	2.3220	36.90	9.92	46.82	56.00	-9.18	peak	
5	2.3220	12.80	9.92	22.72	46.00	-23.28	AVG	
6	2.7380	36.84	9.93	46.77	56.00	-9.23	peak	
7	2.7380	13.50	9.93	23.43	46.00	-22.57	AVG	
8	7.1940	36.49	10.04	46.53	60.00	-13.47	peak	
9	9.9740	36.63	10.15	46.78	60.00	-13.22	peak	



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower



4.2.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Jun .04.2012	May.25.2013
2	Amplifier	HP	8447D	2944A09673	May.26.2012	May.04.2013
3	Test Receiver	R&S	ESCI	100382	May.26.2012	May.04.2013
4	Test Cable	N/A	C-01_CB03	N/A	Jul.01.2012	Jul.01.2013
5	Antenna	ETS	3115	00075789	May.25.2012	May.25.2013
6	Amplifier	Agilent	8449B	3008A02274	May.25.2012	May.04.2013
7	Spectrum	Agilent	E4408B	US39240143	Nov.24.2012	Nov.24.2013
8	Test Cable	HUBER+SUHNER	C-45	N/A	May.04.2012	May.02.2013
9	Controller	CT	SC100	N/A	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	May.26.2012	May.25.2013
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Oct.13.2012	May.04.2013
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct.13.2012	Oct.12.2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



4.2.3 TEST PROCEDURE

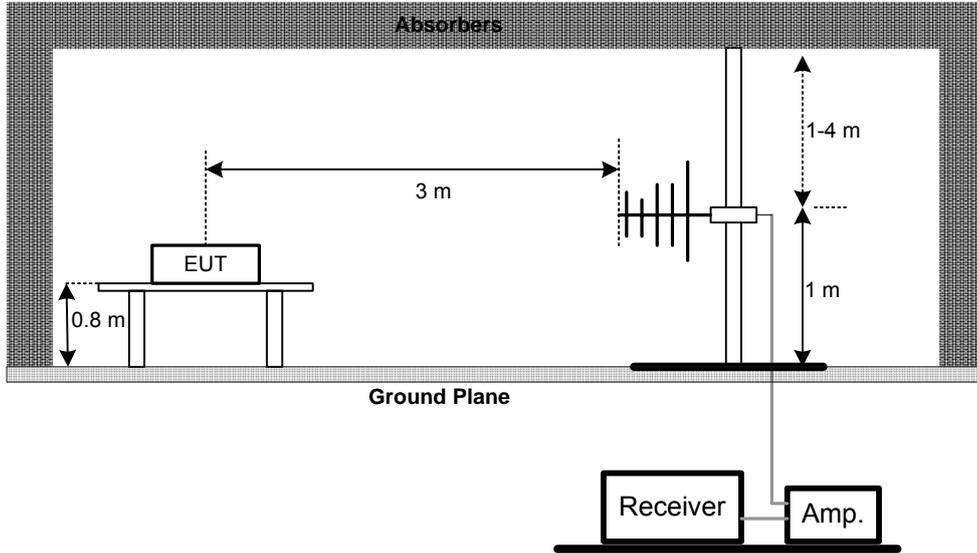
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

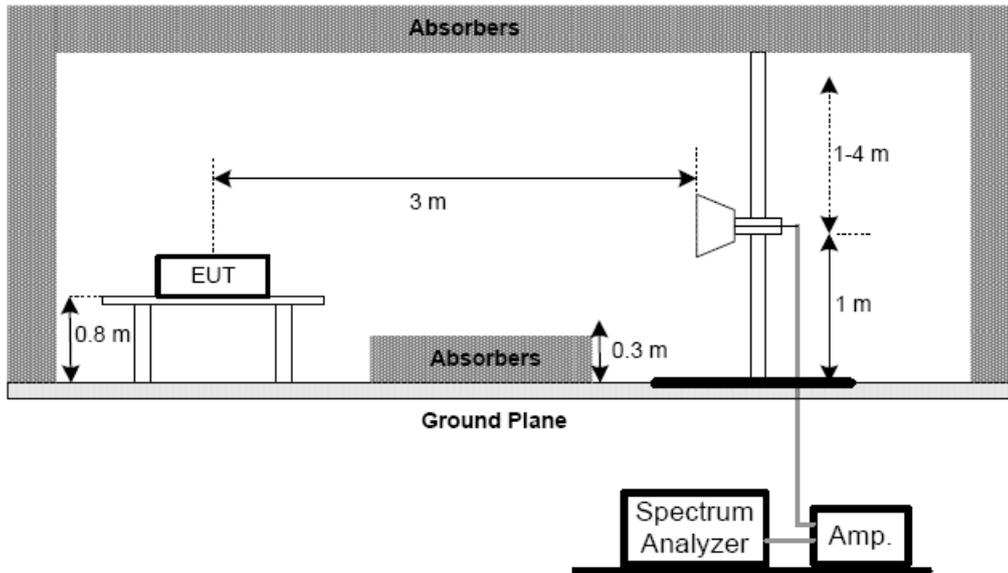
No deviation

4.2.5 TEST SETUP

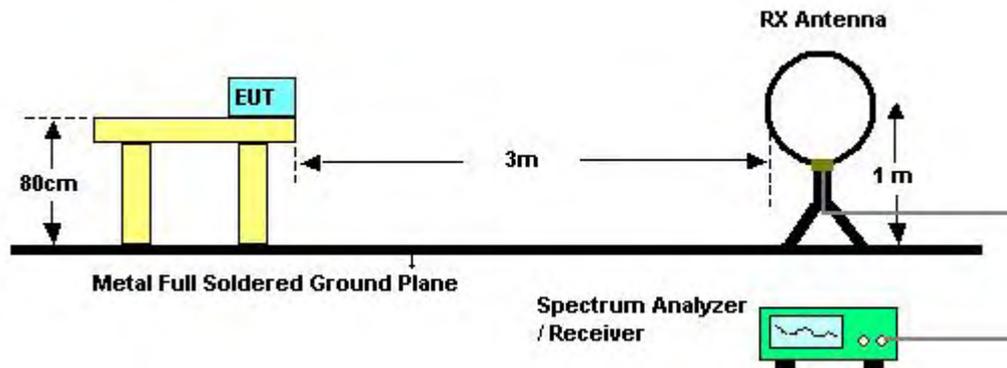
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



4.2.7 TEST RESULTS (9K~ 30MHZ)

EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.010	0°	27.15	24.30	51.45	127.69	-76.24	AV
0.010	0°	30.22	24.30	54.52	147.69	-93.17	PK
0.028	0°	20.47	23.81	44.28	118.72	-74.45	AV
0.028	0°	23.50	23.81	47.31	138.72	-91.42	PK
0.033	0°	21.90	23.50	45.40	117.34	-71.94	AV
0.033	0°	24.75	23.50	48.25	137.34	-89.09	PK
0.055	0°	19.30	22.31	41.61	112.84	-71.24	AV
0.055	0°	22.45	22.31	44.76	132.84	-88.09	PK
0.362	0°	22.30	20.13	42.43	96.43	-54.00	AV
0.362	0°	25.18	20.13	45.31	116.43	-71.12	PK
1.478	0°	26.47	19.55	46.02	64.21	-18.19	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.010	90°	18.52	24.30	42.82	127.96	-85.14	AVG
0.010	90°	21.39	24.30	45.69	147.96	-102.27	PK
0.033	90°	17.59	23.48	41.07	117.26	-76.19	AVG
0.033	90°	21.53	23.48	45.01	137.26	-92.25	PK
0.040	90°	21.36	23.07	44.43	115.67	-71.25	AVG
0.040	90°	23.58	23.07	46.65	135.67	-89.03	PK
0.057	90°	22.41	22.26	44.67	112.52	-67.84	AVG
0.057	90°	26.35	22.26	48.61	132.51	-83.90	PK
0.417	90°	22.14	20.00	42.14	95.20	-53.06	AVG
0.417	90°	25.31	20.00	45.31	115.20	-69.89	PK
1.958	90°	24.10	19.50	43.60	69.54	-25.94	QP

Remark :

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor..



4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦



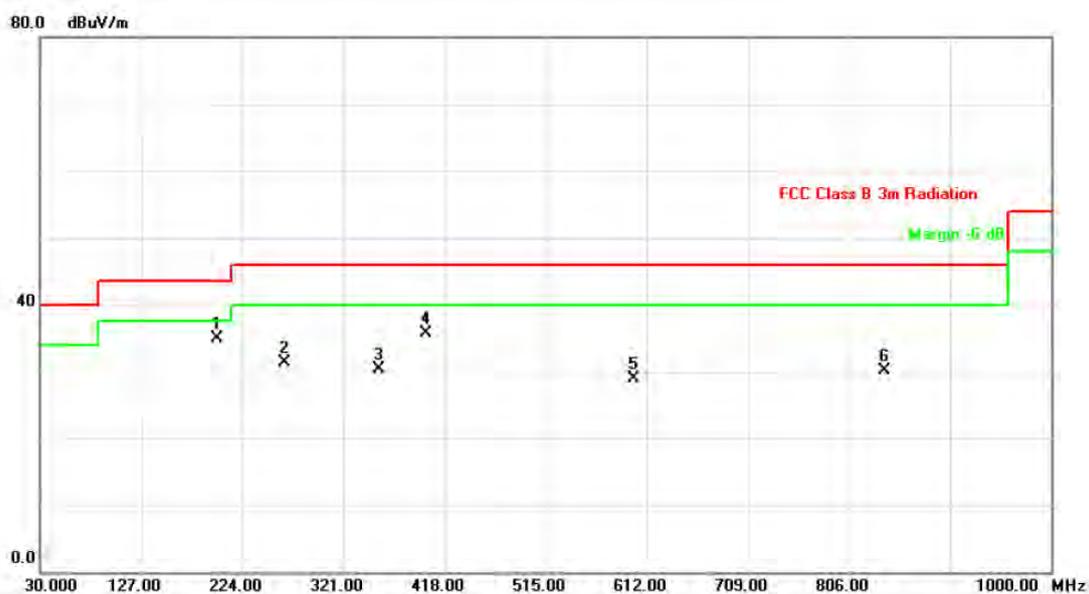
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01 Transformer :Ketc	Polarization:	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	76.0750	51.51	-19.01	32.50	40.00	-7.50	peak	
2		274.9250	43.36	-13.49	29.87	46.00	-16.13	peak	
3		401.0250	42.84	-9.80	33.04	46.00	-12.96	peak	
4		599.8750	35.17	-5.50	29.67	46.00	-16.33	peak	
5		689.6000	35.30	-4.65	30.65	46.00	-15.35	peak	
6		801.1500	34.59	-3.60	30.99	46.00	-15.01	peak	



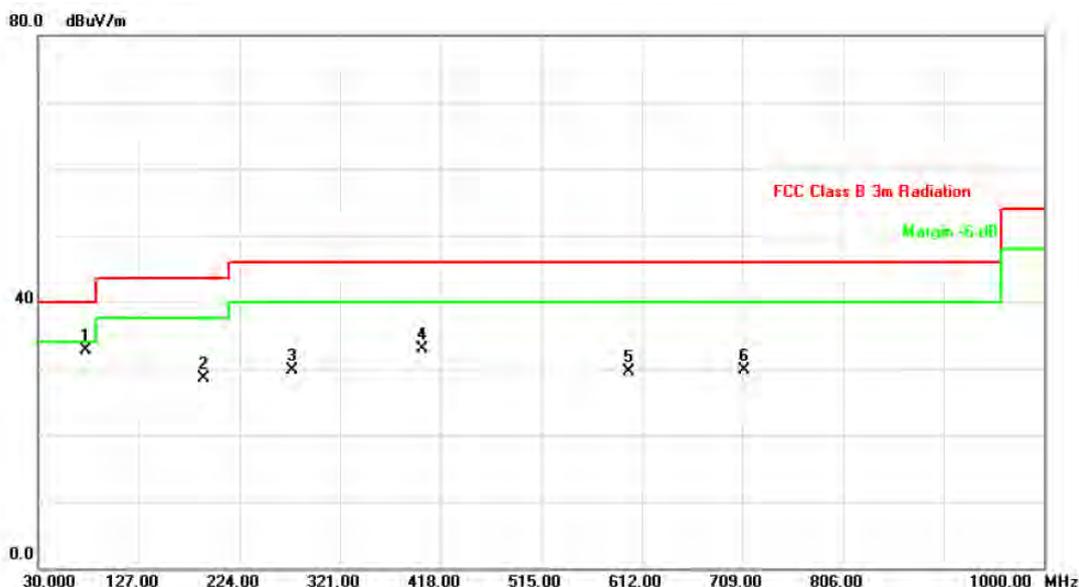
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01 Transformer :Ketc	Polarization:	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	199.7500	51.86	-16.93	34.93	43.50	-8.57	peak	
2		265.2250	45.43	-14.08	31.35	46.00	-14.65	peak	
3		354.9500	41.61	-11.36	30.25	46.00	-15.75	peak	
4		401.0250	45.51	-9.80	35.71	46.00	-10.29	peak	
5		599.8750	34.31	-5.50	28.81	46.00	-17.19	peak	
6		839.9500	32.91	-2.90	30.01	46.00	-15.99	peak	



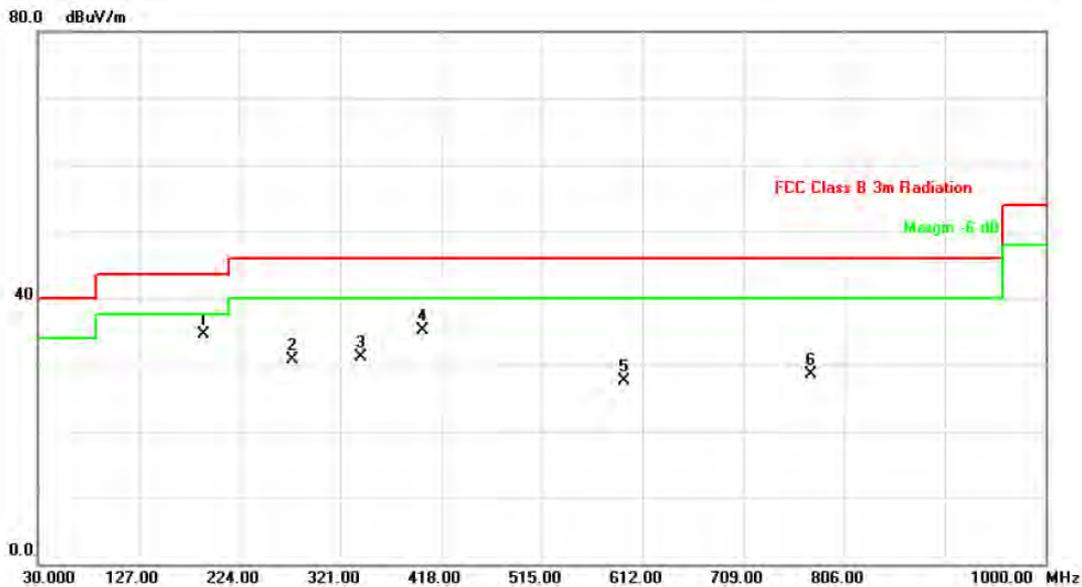
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 06 Transformer :Ketc	Polarization:	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	76.0750	51.79	-19.01	32.78	40.00	-7.22	peak	
2		190.0500	45.59	-17.09	28.50	43.50	-15.00	peak	
3		274.9250	43.25	-13.49	29.76	46.00	-16.24	peak	
4		401.0250	42.75	-9.80	32.95	46.00	-13.05	peak	
5		599.8750	34.98	-5.50	29.48	46.00	-16.52	peak	
6		711.4250	34.36	-4.56	29.80	46.00	-16.20	peak	



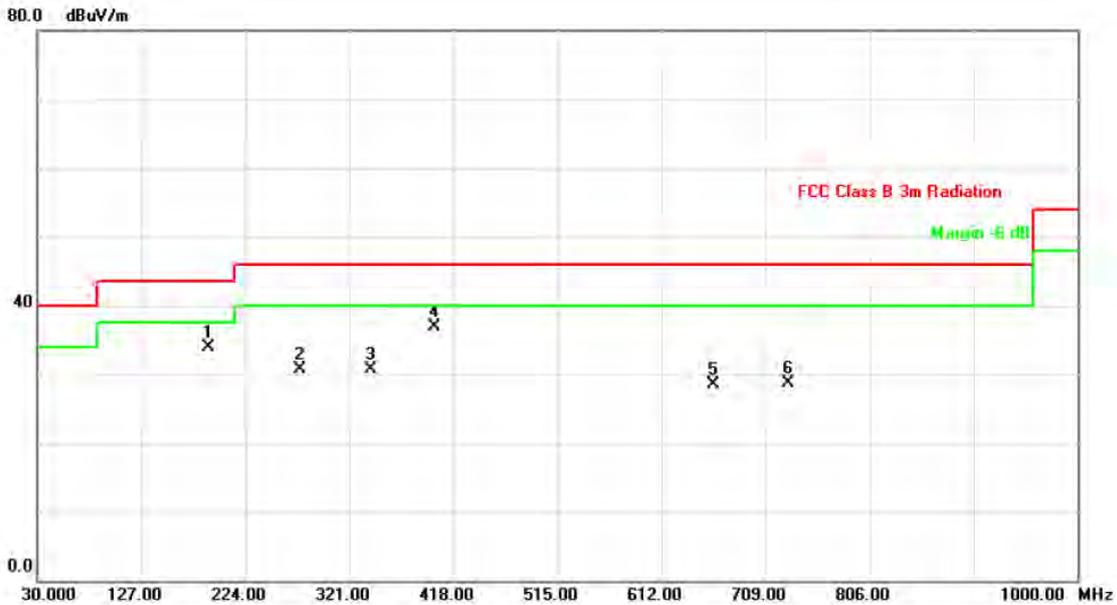
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 06 Transformer :Ketc	Polarization:	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	190.0500	51.60	-17.09	34.51	43.50	-8.99	peak	
2		274.9250	44.10	-13.49	30.61	46.00	-15.39	peak	
3		340.4000	42.81	-11.73	31.08	46.00	-14.92	peak	
4		401.0250	44.83	-9.80	35.03	46.00	-10.97	peak	
5		595.0250	33.11	-5.61	27.50	46.00	-18.50	peak	
6		774.4750	32.35	-3.94	28.41	46.00	-17.59	peak	



EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 11 Transformer :Ketc	Polarization:	Vertical

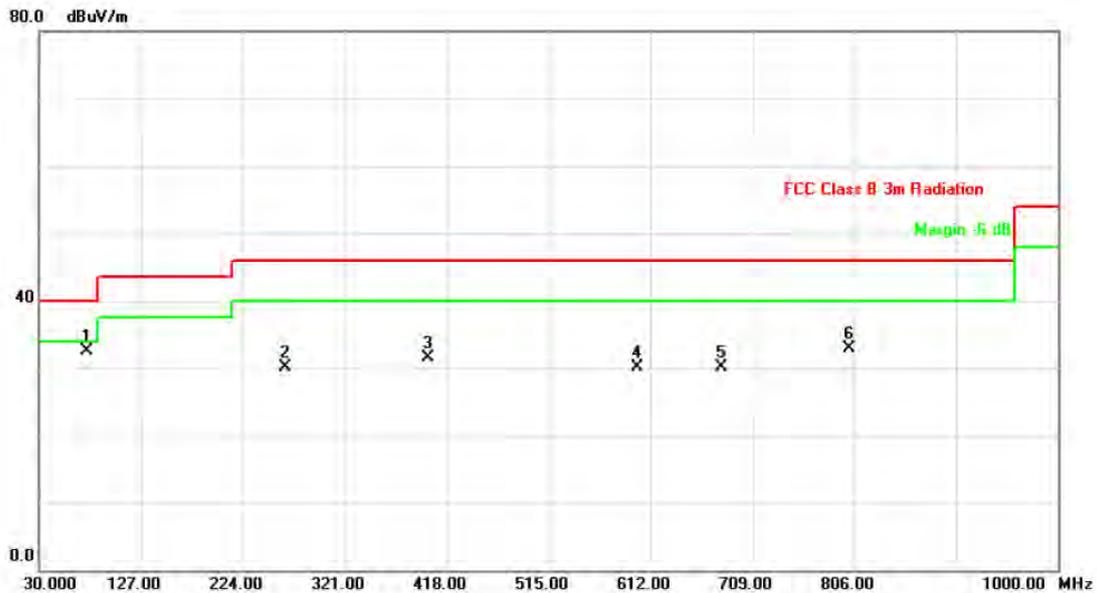


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		190.0500	50.96	-17.09	33.87	43.50	-9.63	peak	
2		274.9250	44.20	-13.49	30.71	46.00	-15.29	peak	
3		340.4000	42.51	-11.73	30.78	46.00	-15.22	peak	
4	*	401.0250	46.69	-9.80	36.89	46.00	-9.11	peak	
5		660.5000	33.22	-4.67	28.55	46.00	-17.45	peak	
6		730.8250	33.13	-4.41	28.72	46.00	-17.28	peak	



Neutron Engineering Inc.

EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 11 Transformer :Ketc	Polarization:	Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1 *	76.0750	51.57	-19.01	32.56	40.00	-7.44	peak	
2	265.2250	44.23	-14.08	30.15	46.00	-15.85	peak	
3	401.0250	41.39	-9.80	31.59	46.00	-14.41	peak	
4	599.8750	35.66	-5.50	30.16	46.00	-15.84	peak	
5	679.9000	34.81	-4.67	30.14	46.00	-15.86	peak	
6	801.1500	36.53	-3.60	32.93	46.00	-13.07	peak	



EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01 Transformer :MOSO	Polarization:	Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	90.6250	52.72	-19.18	33.54	43.50	-9.96	peak	
2	199.7500	49.78	-16.93	32.85	43.50	-10.65	peak	
3	274.9250	40.78	-13.49	27.29	46.00	-18.71	peak	
4 *	401.0250	46.06	-9.80	36.26	46.00	-9.74	peak	
5	500.4500	41.13	-8.37	32.76	46.00	-13.24	peak	
6	599.8750	37.33	-5.50	31.83	46.00	-14.17	peak	



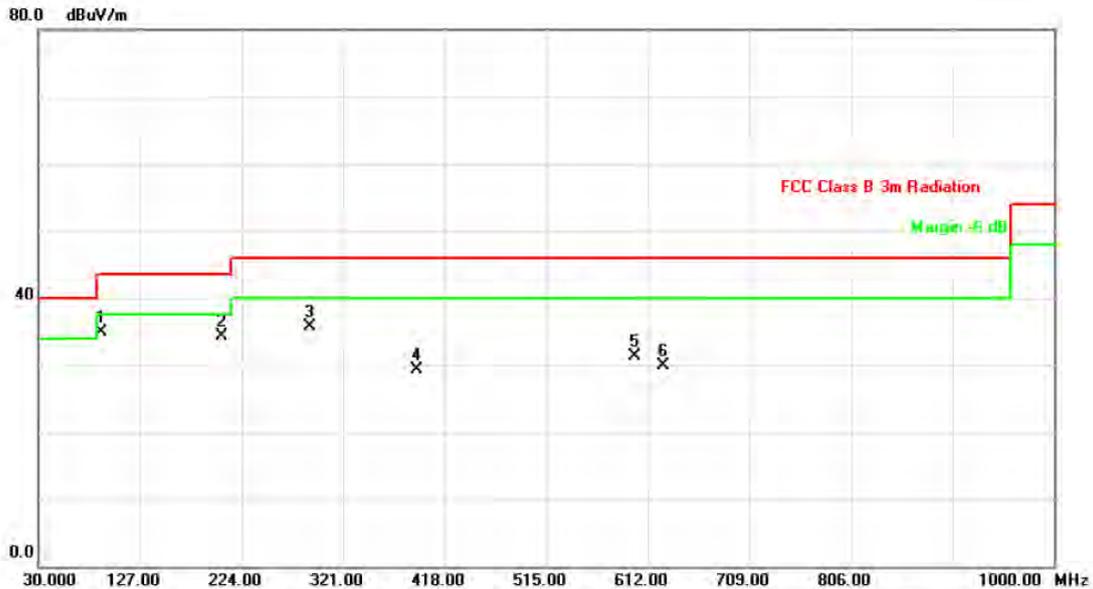
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01 Transformer :MOSO	Polarization:	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	190.0500	49.11	-17.09	32.02	43.50	-11.48	peak	
2		265.2250	42.26	-14.08	28.18	46.00	-17.82	peak	
3		340.4000	41.51	-11.73	29.78	46.00	-16.22	peak	
4		401.0250	42.28	-9.80	32.48	46.00	-13.52	peak	
5		670.2000	33.01	-4.68	28.33	46.00	-17.67	peak	
6		801.1500	34.48	-3.60	30.88	46.00	-15.12	peak	



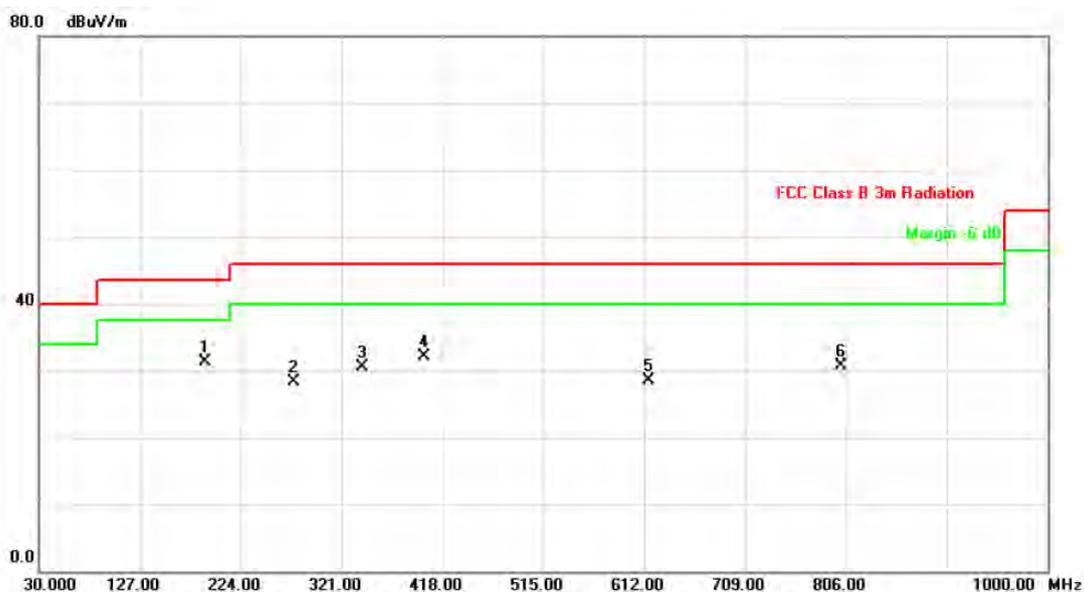
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Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 06 Transformer :MOSO	Polarization:	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	90.6250	54.00	-19.18	34.82	43.50	-8.68	peak	
2		204.6000	51.15	-16.85	34.30	43.50	-9.20	peak	
3		289.4750	48.30	-12.63	35.67	46.00	-10.33	peak	
4		391.3250	39.50	-10.11	29.39	46.00	-16.61	peak	
5		599.8750	36.78	-5.50	31.28	46.00	-14.72	peak	
6		626.5500	34.86	-5.05	29.81	46.00	-16.19	peak	



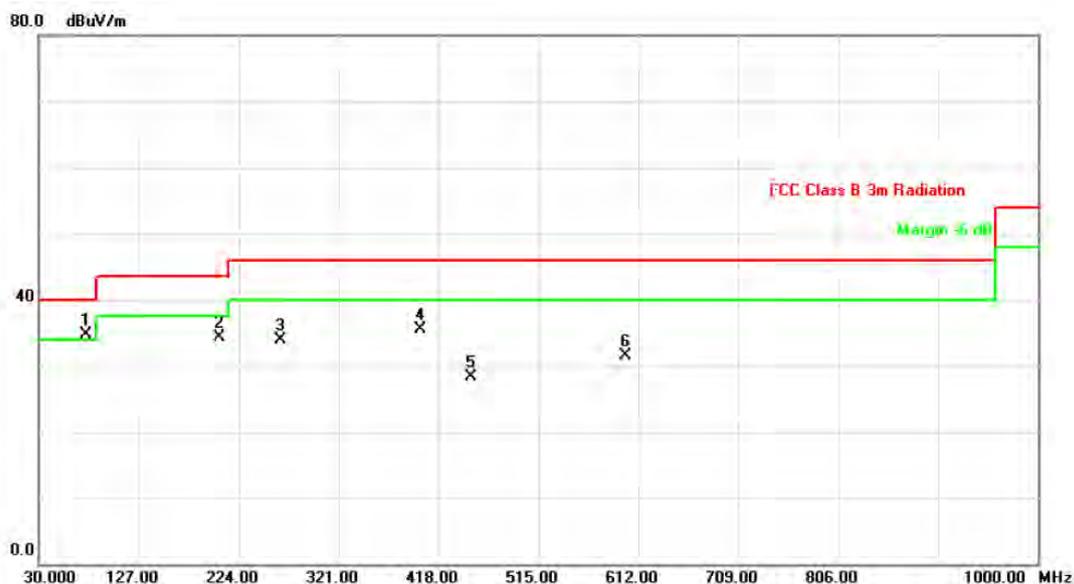
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 06 Transformer :MOSO	Polarization:	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	190.0500	48.46	-17.09	31.37	43.50	-12.13	peak	
2		274.9250	41.80	-13.49	28.31	46.00	-17.69	peak	
3		340.4000	42.18	-11.73	30.45	46.00	-15.55	peak	
4		401.0250	41.92	-9.80	32.12	46.00	-13.88	peak	
5		616.8500	33.74	-5.23	28.51	46.00	-17.49	peak	
6		801.1500	34.21	-3.60	30.61	46.00	-15.39	peak	



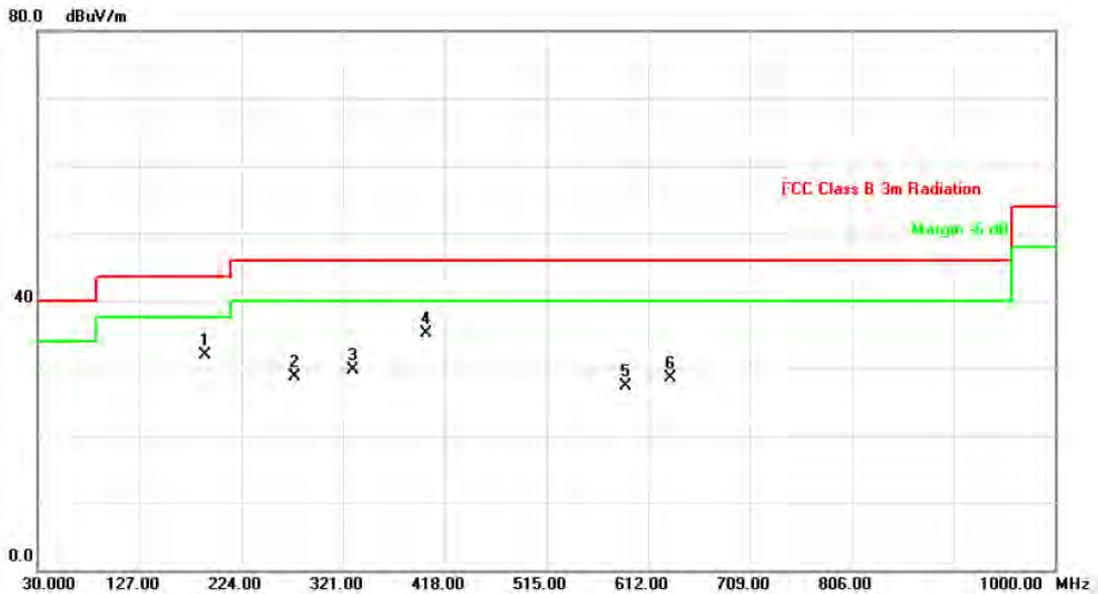
EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 11 Transformer :MOSO	Polarization:	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	76.0750	53.81	-19.01	34.80	40.00	-5.20	peak	
2		204.6000	51.18	-16.85	34.33	43.50	-9.17	peak	
3		265.2250	48.00	-14.08	33.92	46.00	-12.08	peak	
4		401.0250	45.35	-9.80	35.55	46.00	-10.45	peak	
5		449.5250	37.27	-9.01	28.26	46.00	-17.74	peak	
6		599.8750	37.01	-5.50	31.51	46.00	-14.49	peak	



EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 11 Transformer :MOSO	Polarization:	Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	190.0500	48.98	-17.09	31.89	43.50	-11.61	peak	
2	274.9250	42.29	-13.49	28.80	46.00	-17.20	peak	
3	330.7000	41.74	-11.97	29.77	46.00	-16.23	peak	
4 *	401.0250	44.82	-9.80	35.02	46.00	-10.98	peak	
5	590.1750	32.93	-5.71	27.22	46.00	-18.78	peak	
6	633.8250	33.40	-4.92	28.48	46.00	-17.52	peak	



4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

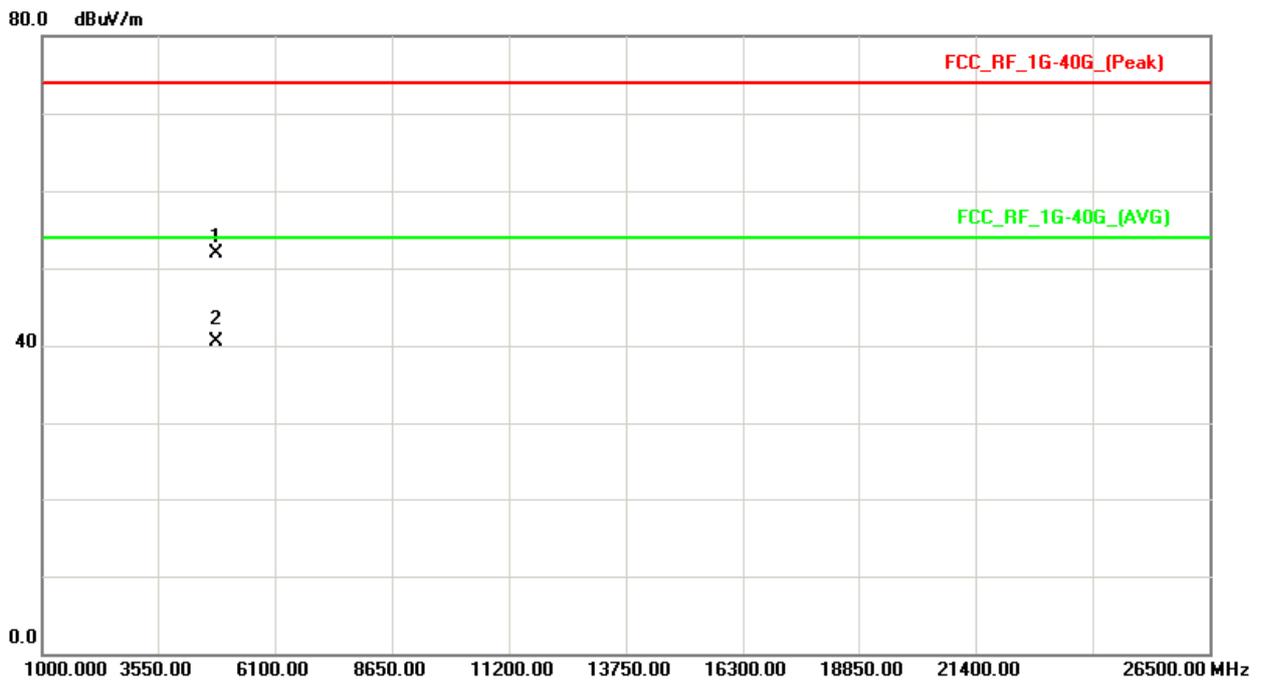
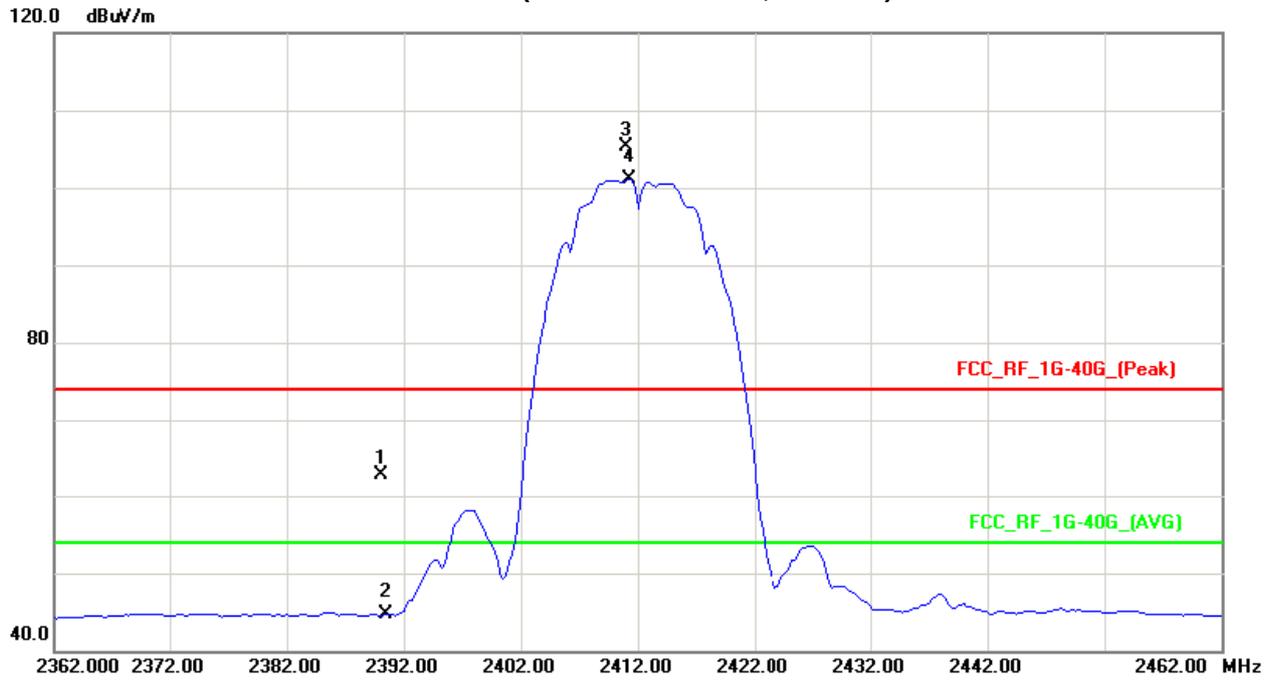
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	30.53	12.33	32.28	62.81	44.61	74.00	54.00	X/E
2411.25	V	73.00	68.86	32.26	105.26	101.12			X/F
4823.89	V	45.72	34.26	6.19	51.91	40.45	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

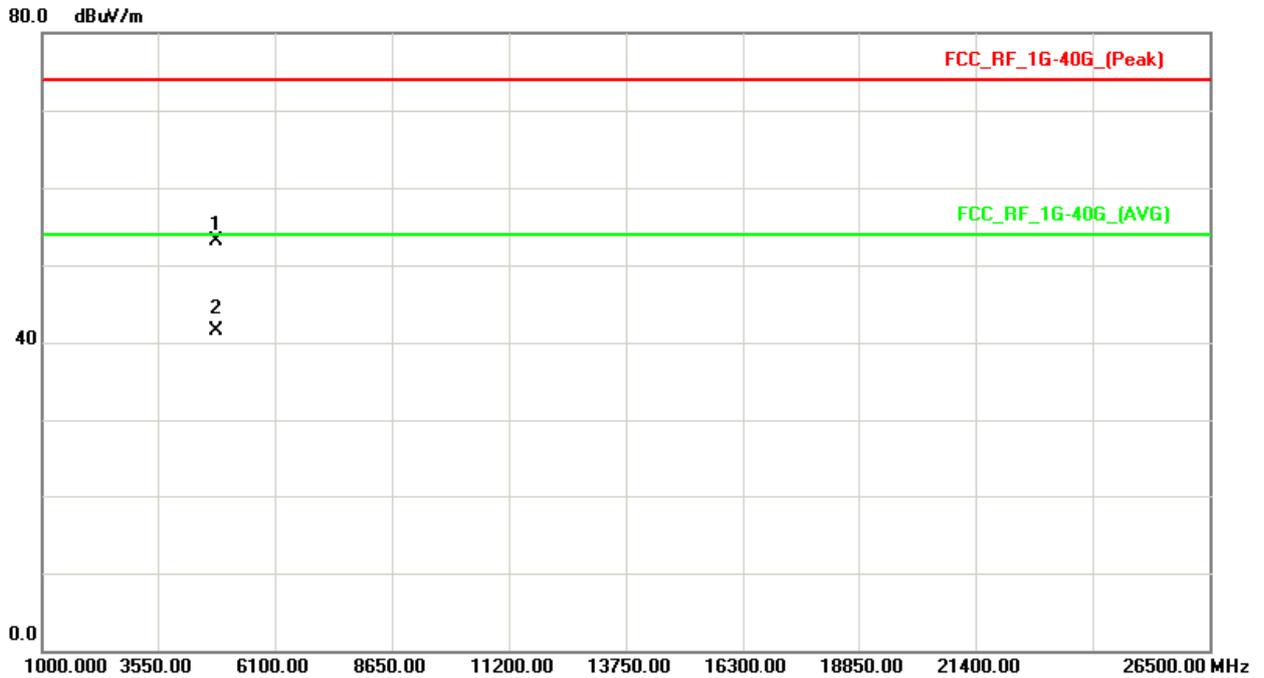
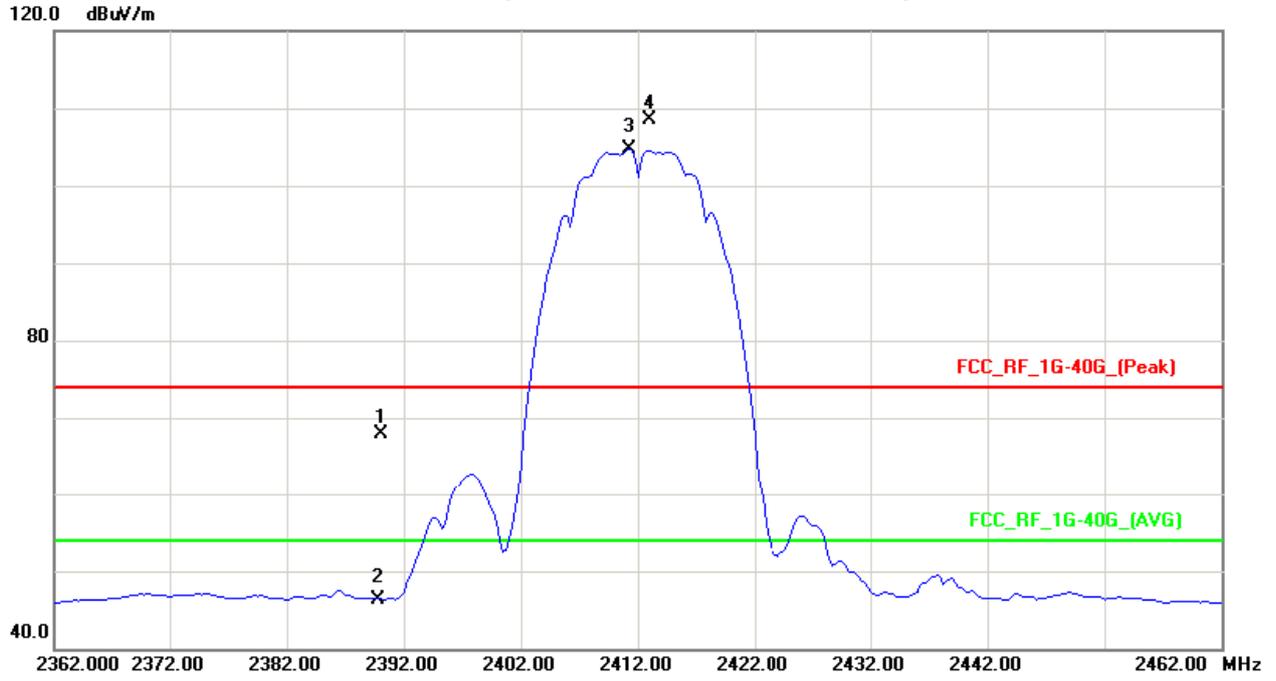
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	35.65	14.12	32.28	67.93	46.40	74.00	54.00	X/E
2411.25	H	76.29	72.41	32.26	108.55	104.67			X/F
4823.95	H	46.89	35.32	6.19	53.08	41.51	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

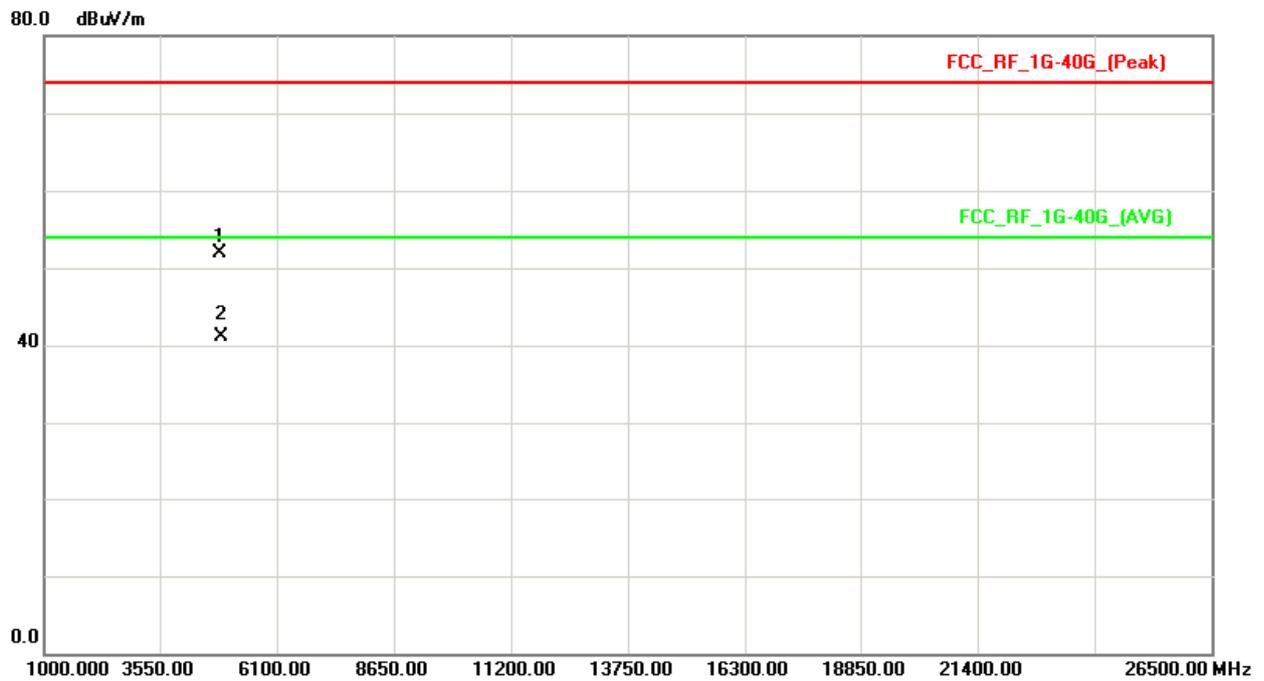
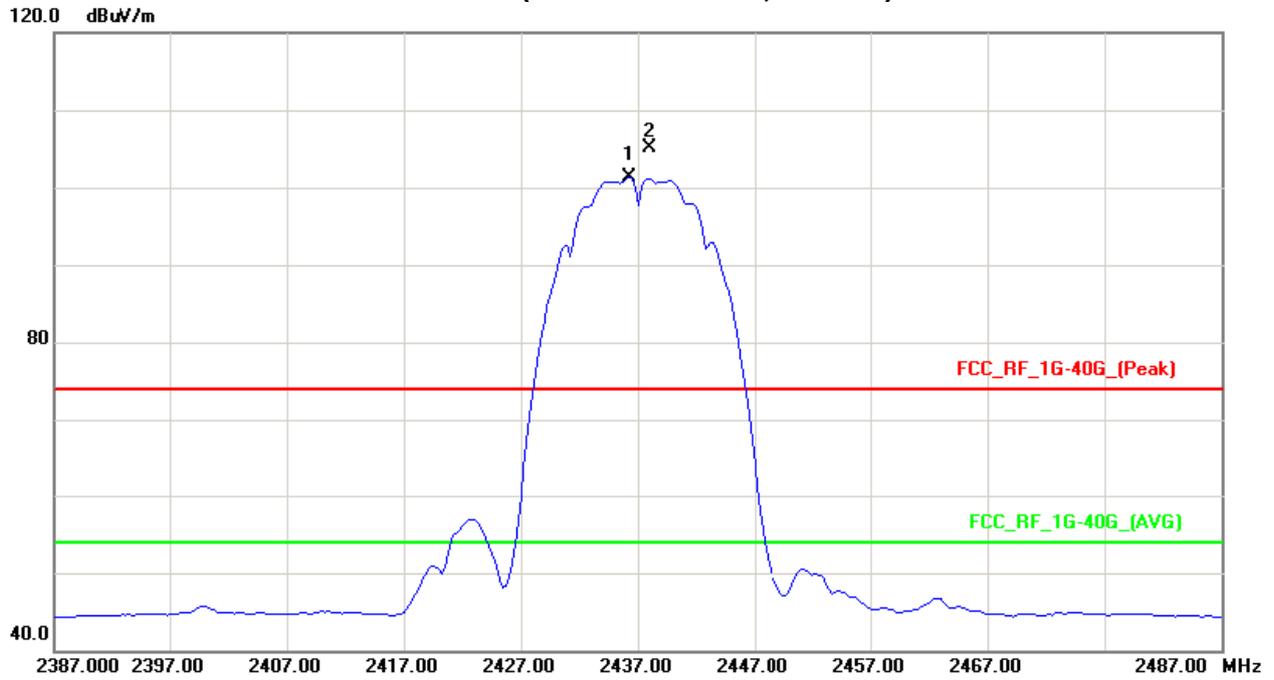
Freq.	Ant.Pol.	Reading		Ant./CF	Act		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2438.00	V	72.95	69.03	32.23	105.18	101.26			X/F
4874.04	V	45.52	34.71	6.39	51.91	41.10	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

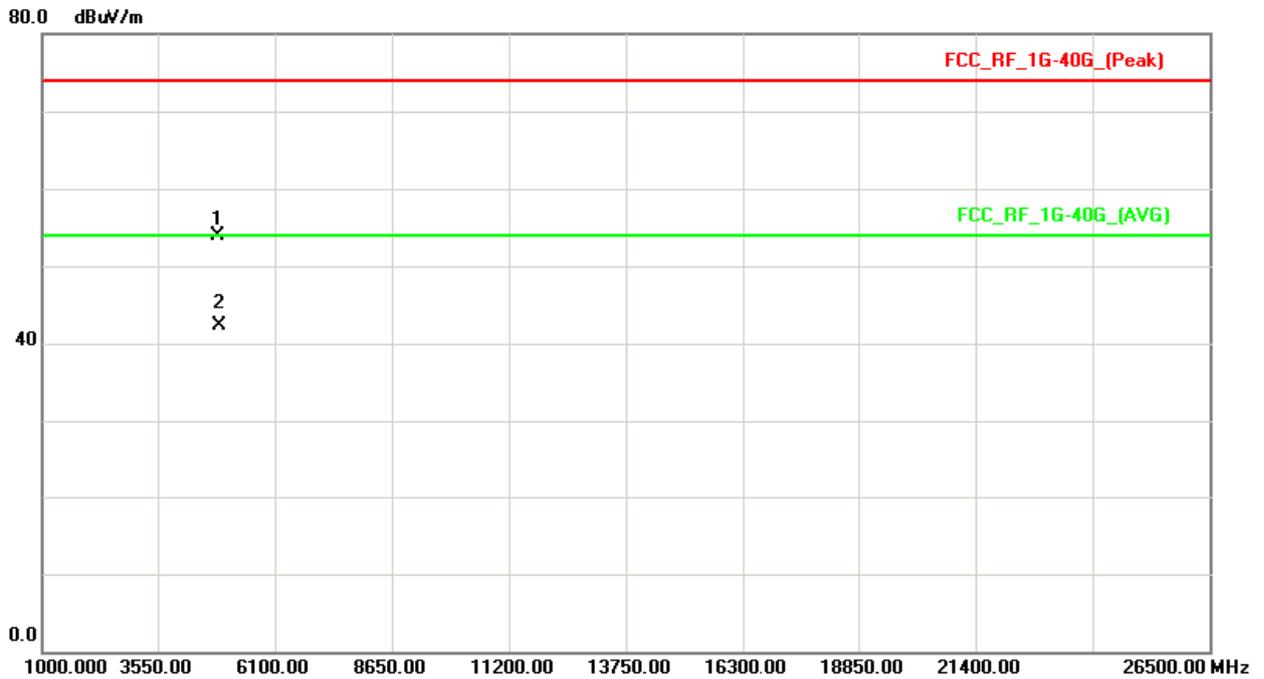
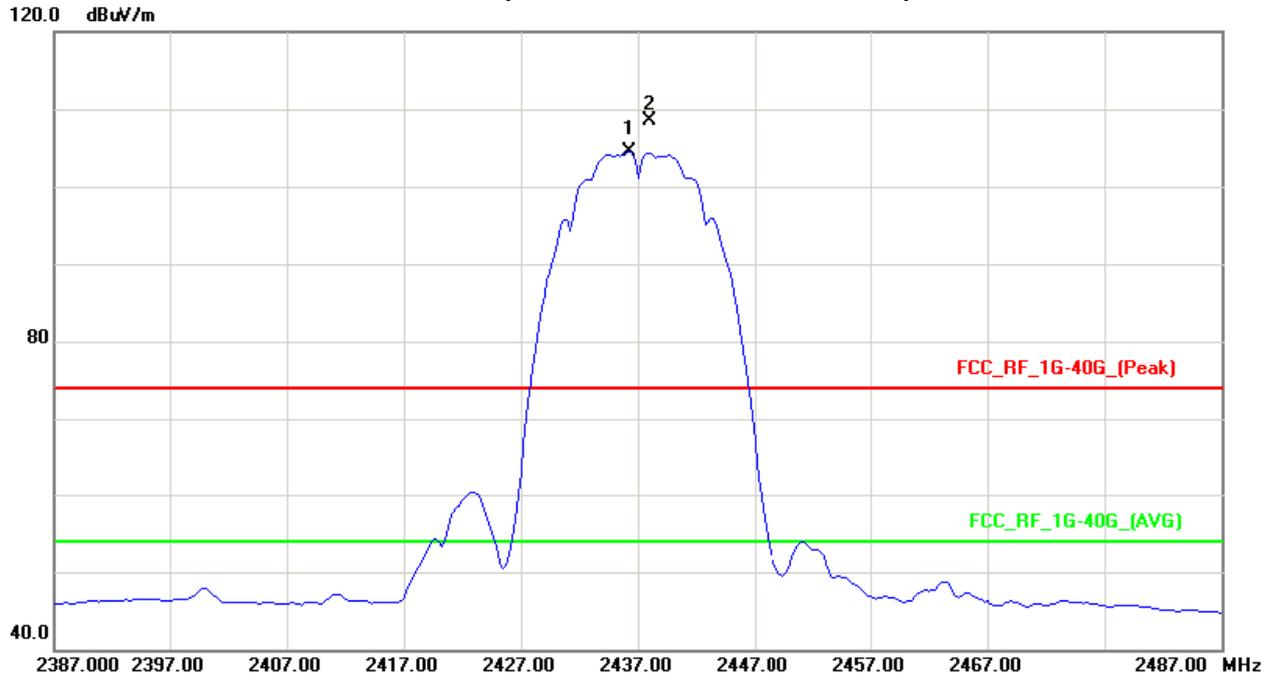
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2436.25	H	76.26	72.31	32.23	108.49	104.54			X/F
4874.02	H	47.53	35.95	6.39	53.92	42.34	74.00	54.00	X/E

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

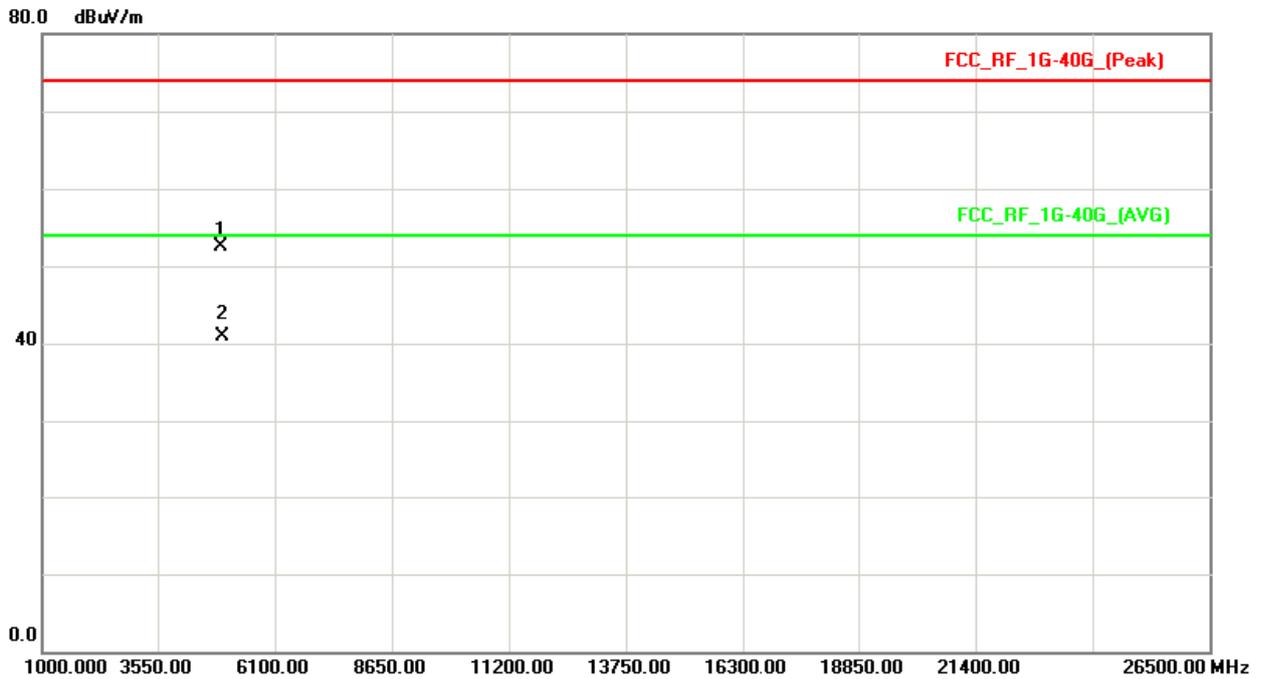
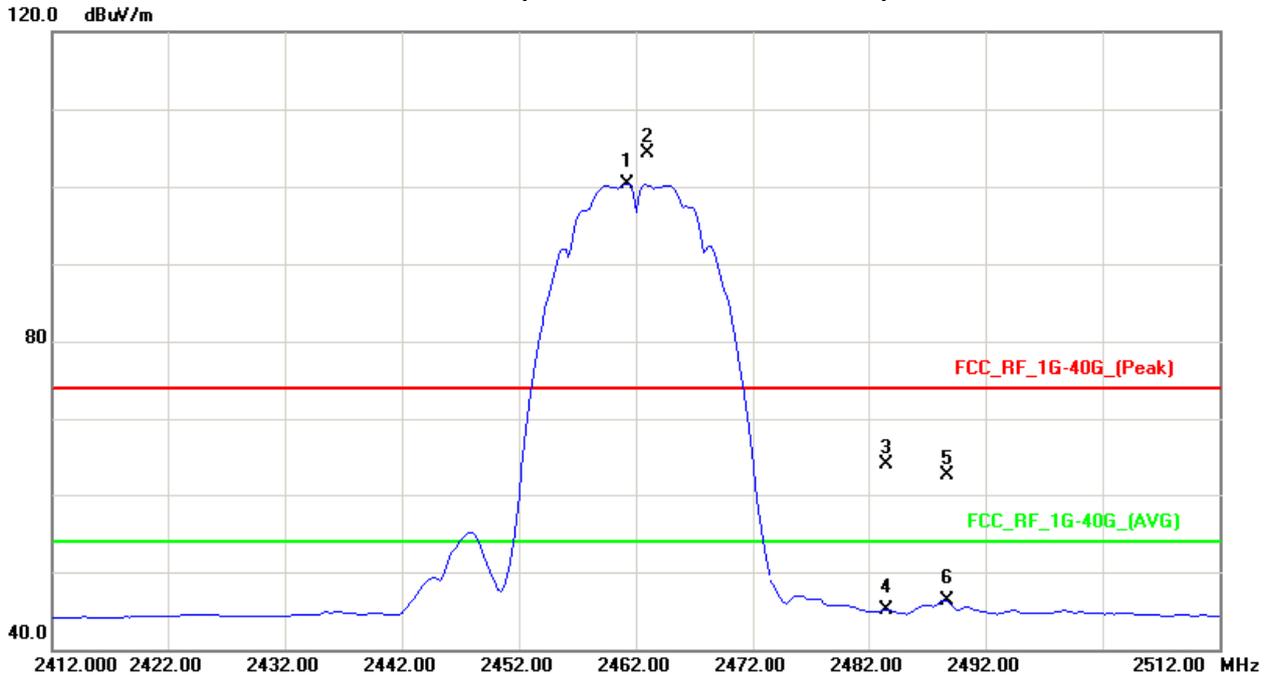
Freq. (MHz)	Ant. Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2463.00	V	72.17	68.18	32.20	104.37	100.38			X/F
2483.50	V	31.98	12.95	32.17	64.15	45.12	74.00	54.00	X/H
2488.75	V	30.62	14.09	32.17	62.79	46.26	74.00	54.00	X/H
4924.05	V	45.86	34.28	6.59	52.45	40.87	74.00	54.00	X/E

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

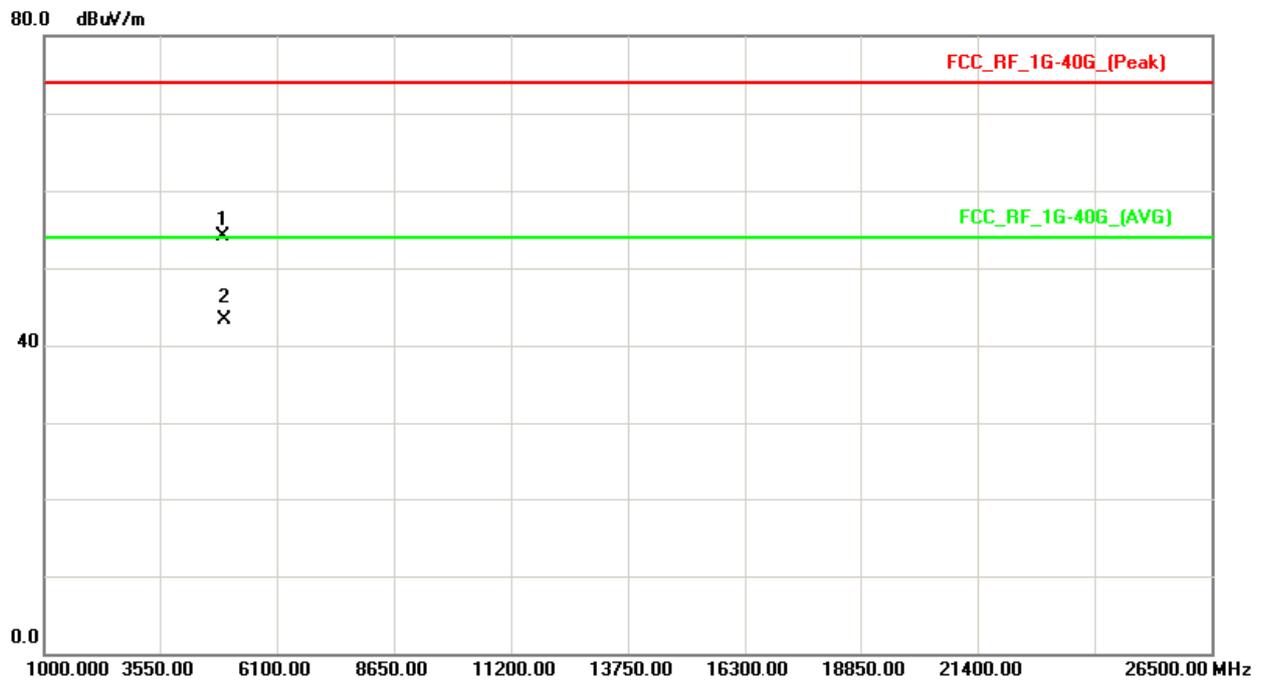
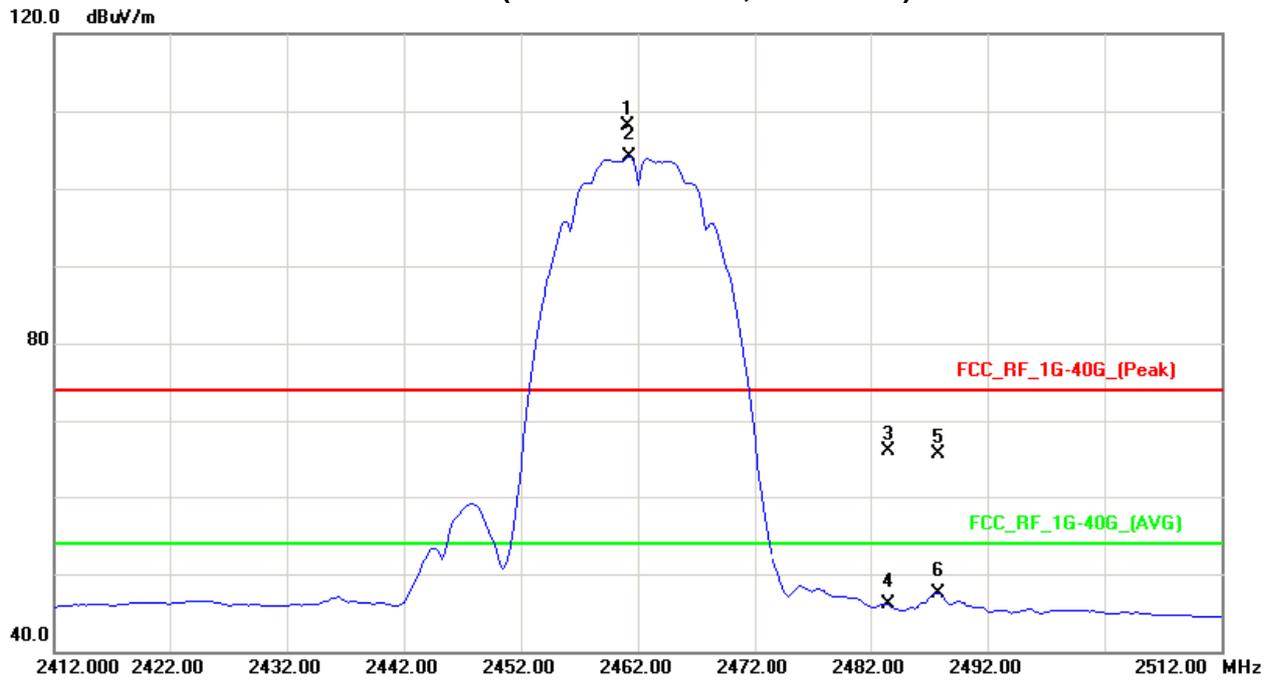
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2461.20	H	75.86	71.85	32.20	108.06	104.05			X/F
2483.50	H	33.86	13.86	32.17	66.03	46.03	74.00	54.00	X/H
2487.75	H	33.47	15.38	32.17	65.64	47.55	74.00	54.00	X/H
4923.98	H	47.58	36.72	6.59	54.17	43.31	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

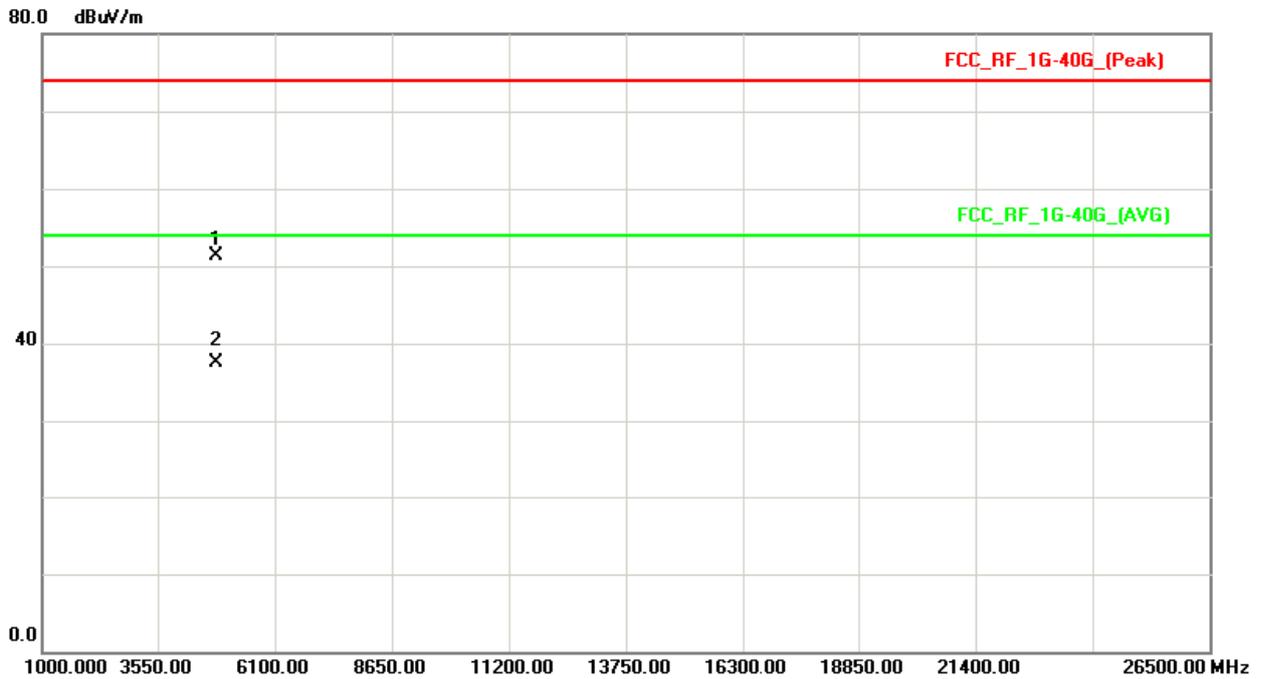
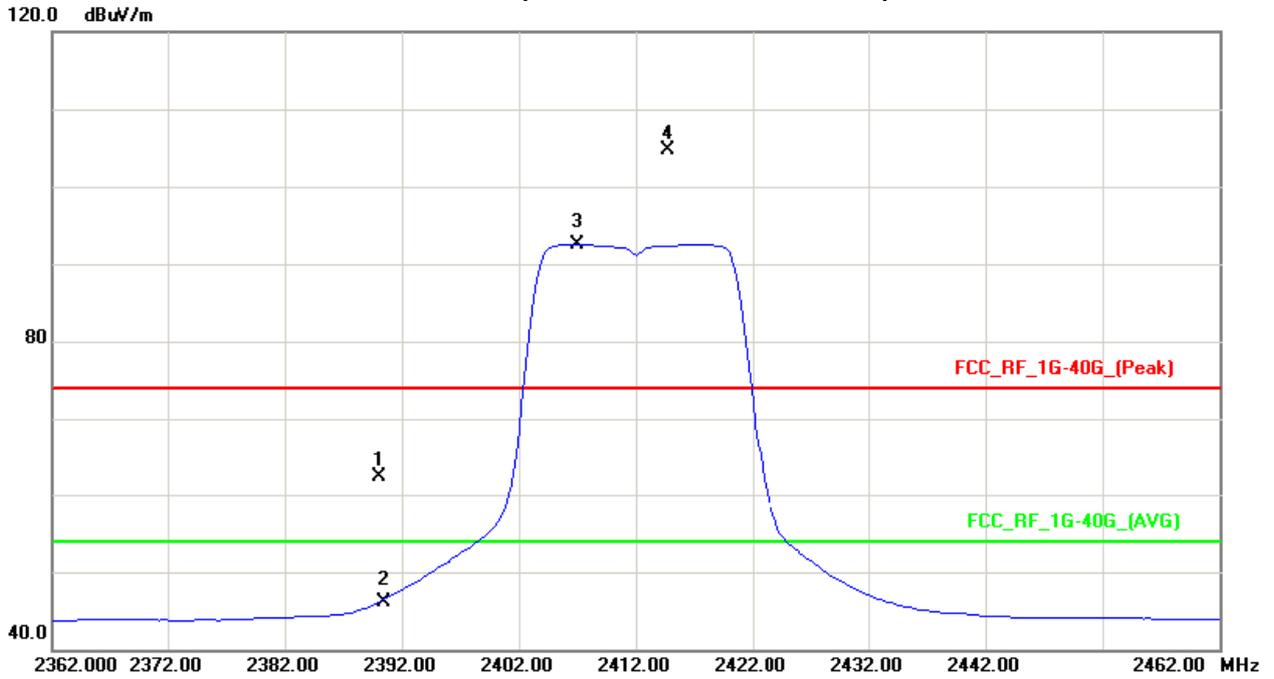
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	30.24	13.78	32.28	62.52	46.06	74.00	54.00	X/E
2414.75	V	72.49	60.28	32.25	104.74	92.53			X/F
4823.92	V	45.21	31.26	6.19	51.40	37.45	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz – Integral Antenna		

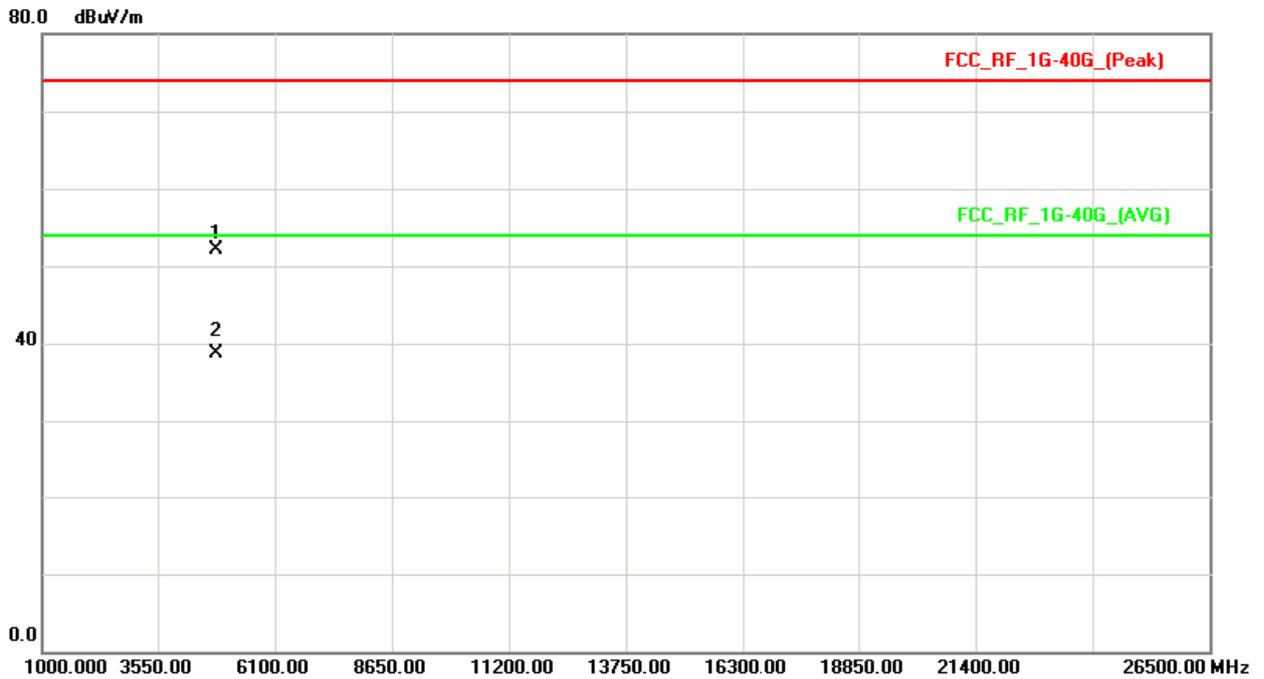
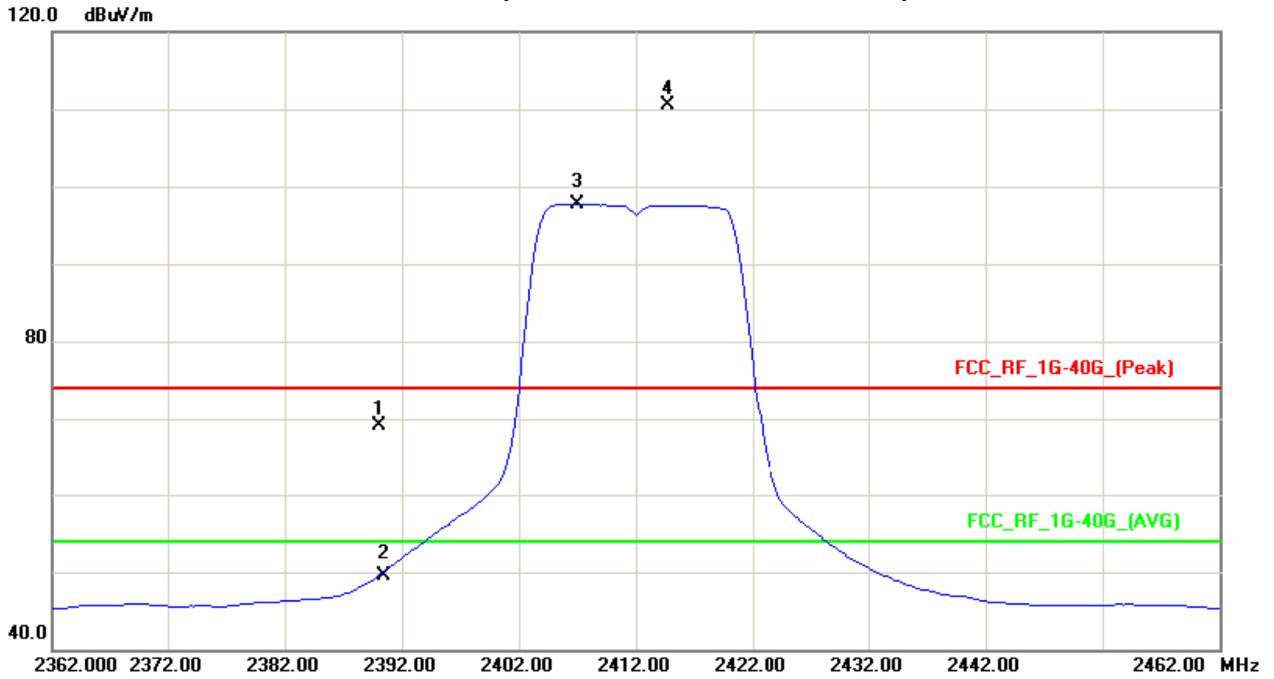
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	36.91	17.20	32.28	69.19	49.48	74.00	54.00	X/E
2414.75	H	78.35	65.53	32.25	110.60	97.78			X/F
4824.02	H	45.82	32.51	6.19	52.01	38.70	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

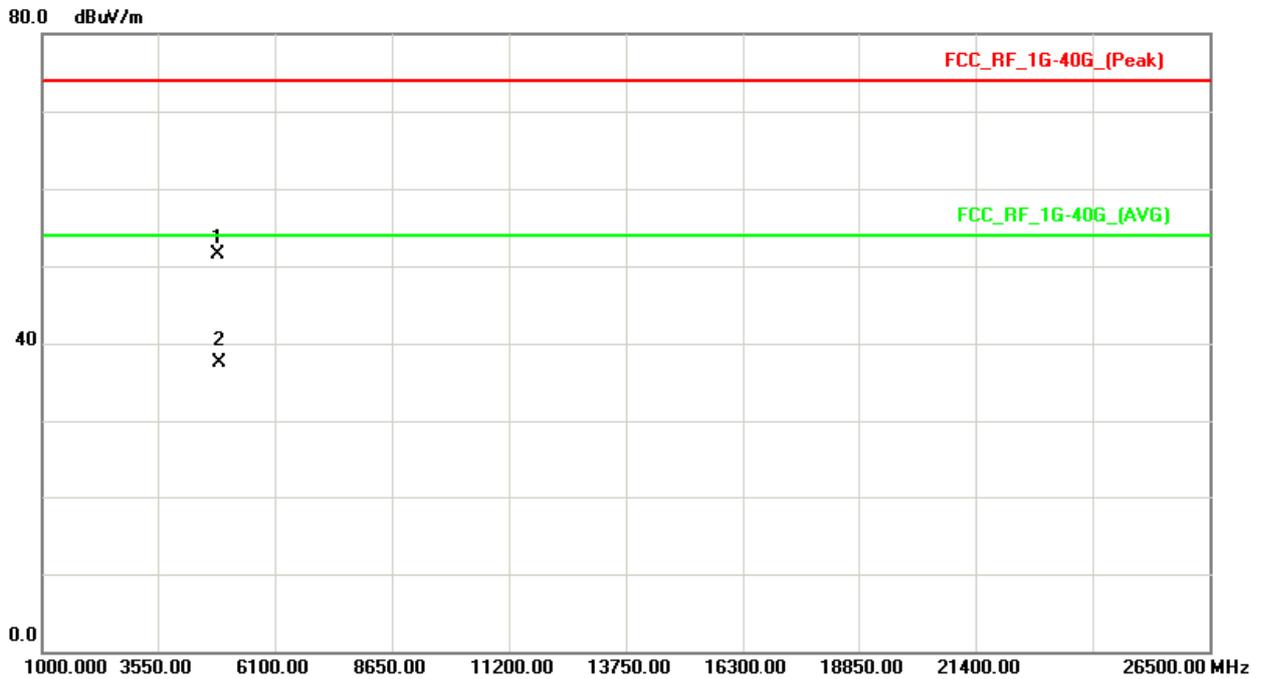
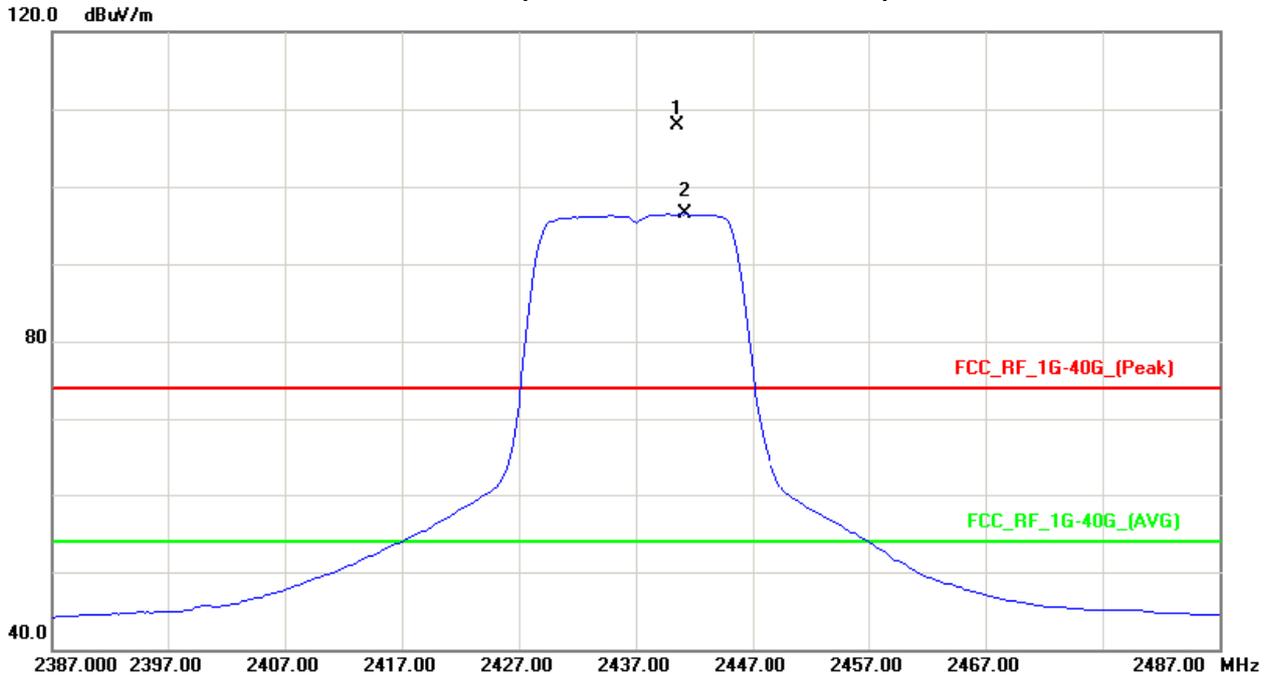
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2440.50	V	75.60	64.20	32.23	107.83	96.43			X/F
4873.96	V	45.21	31.08	6.39	51.60	37.47	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

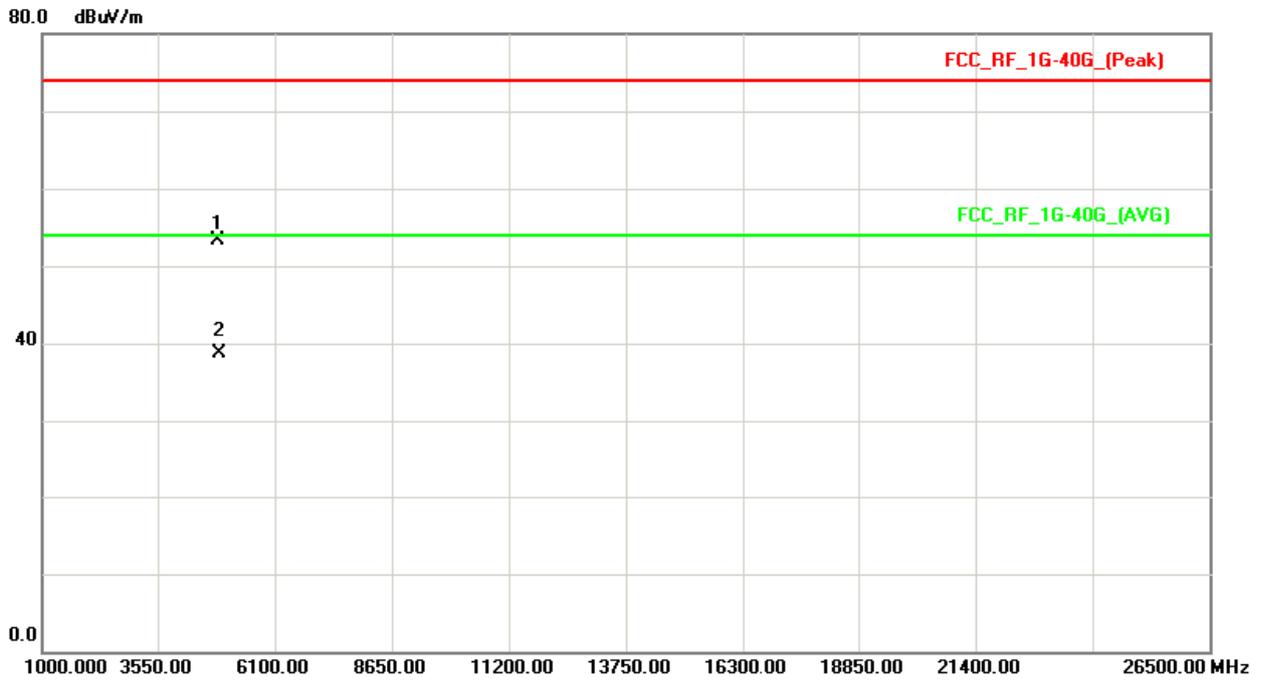
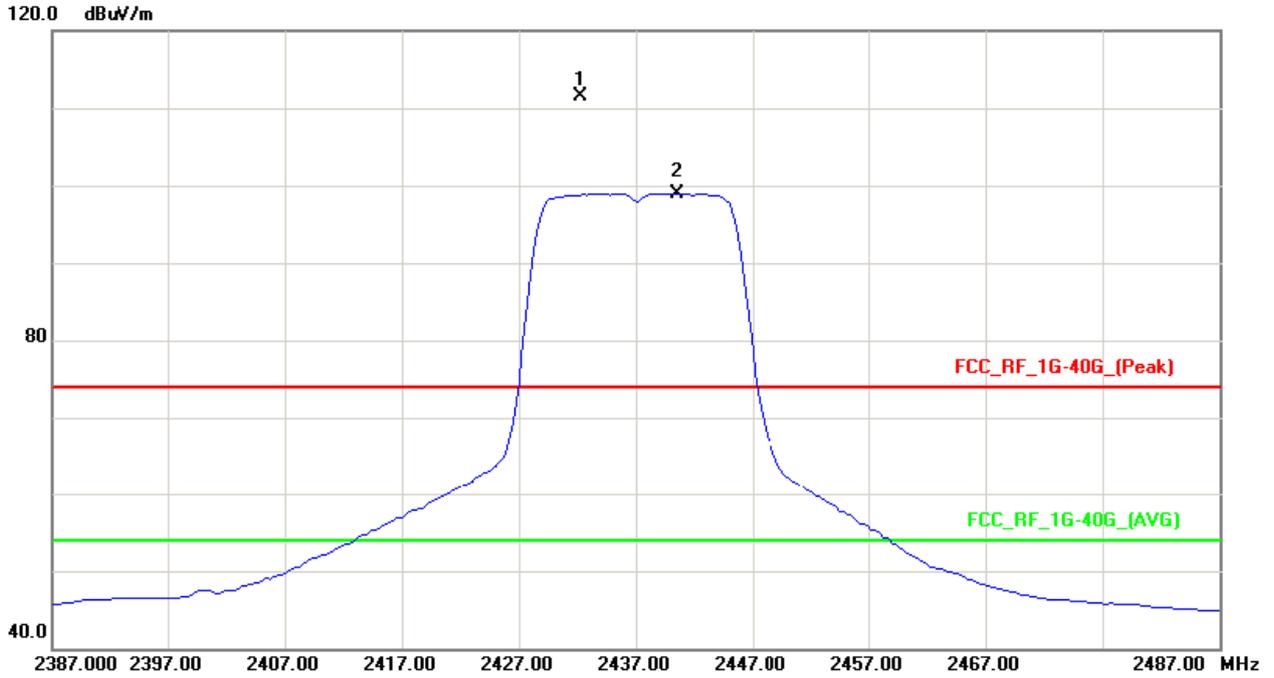
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2432.25	H	79.26	66.70	32.24	111.50	98.94			X/F
4874.12	H	46.95	32.41	6.39	53.34	38.80	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

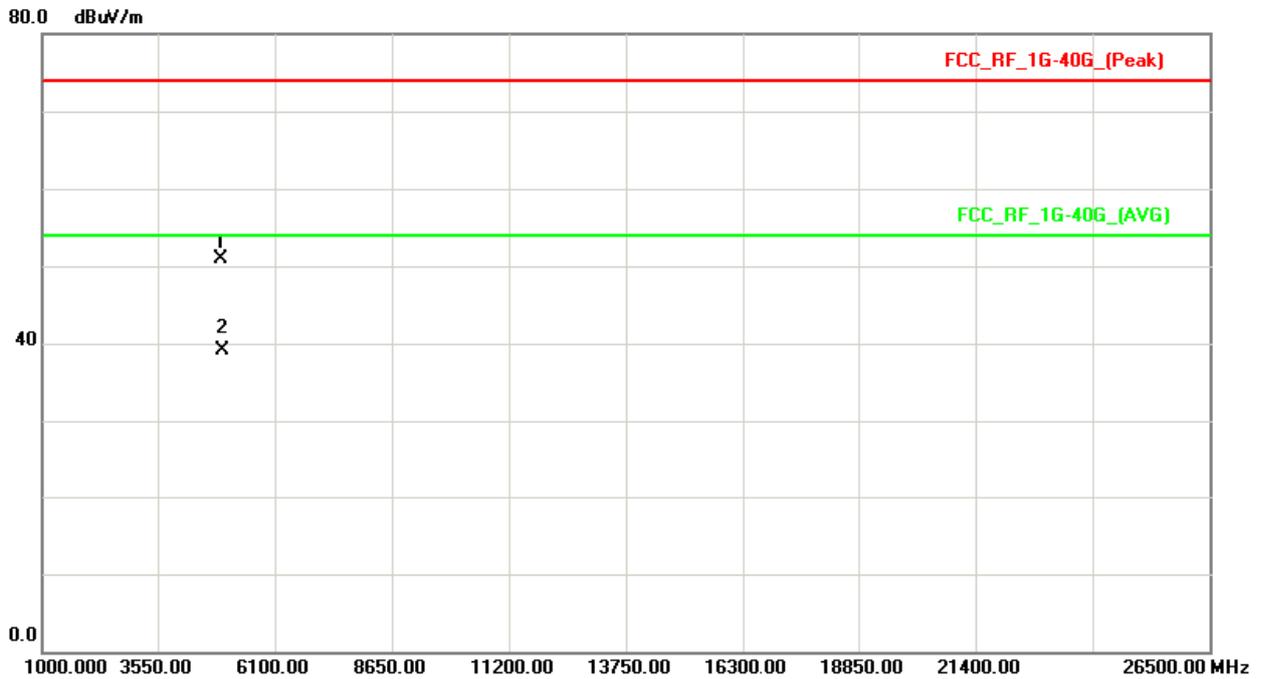
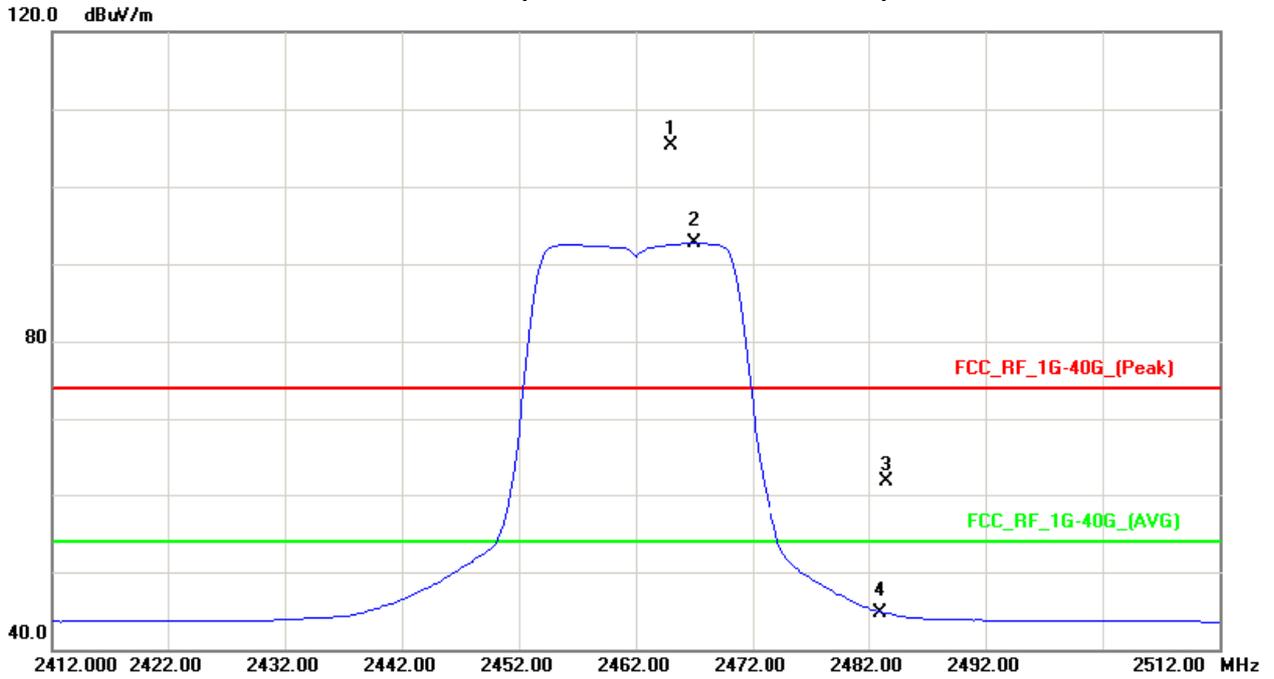
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2465.00	V	73.15	60.46	32.20	105.35	92.66			X/F
2483.50	V	29.83	12.47	32.17	62.00	44.64	74.00	54.00	X/E
4924.12	V	44.31	32.45	6.59	50.90	39.04	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

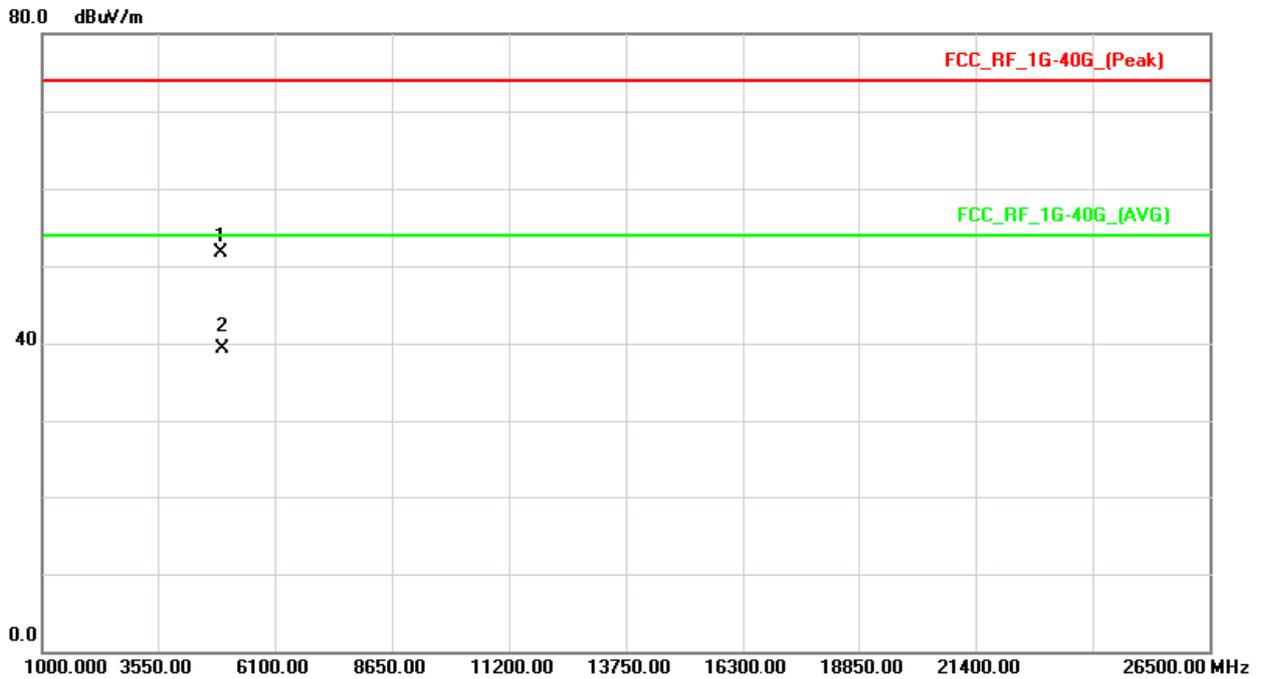
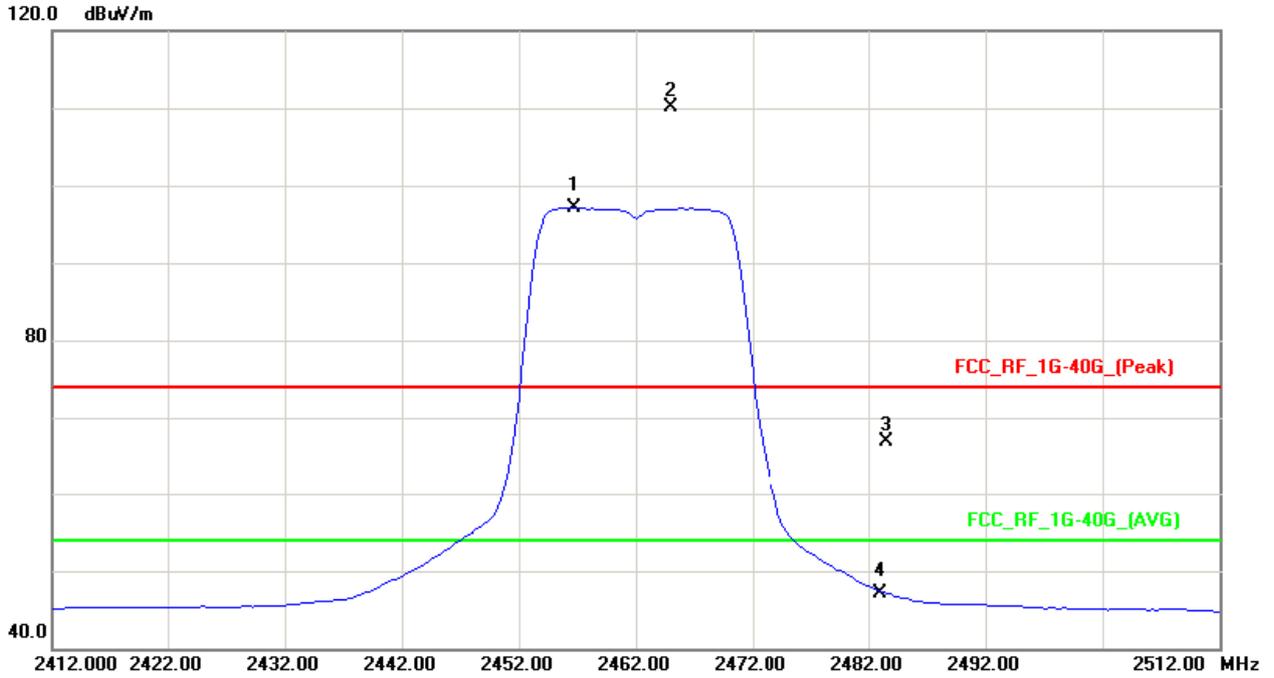
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2465.00	H	77.87	64.90	32.21	110.08	97.11			X/F
2483.50	H	34.79	14.96	32.17	66.96	47.13	74.00	54.00	X/E
4924.15	H	45.21	32.69	6.59	51.80	39.28	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

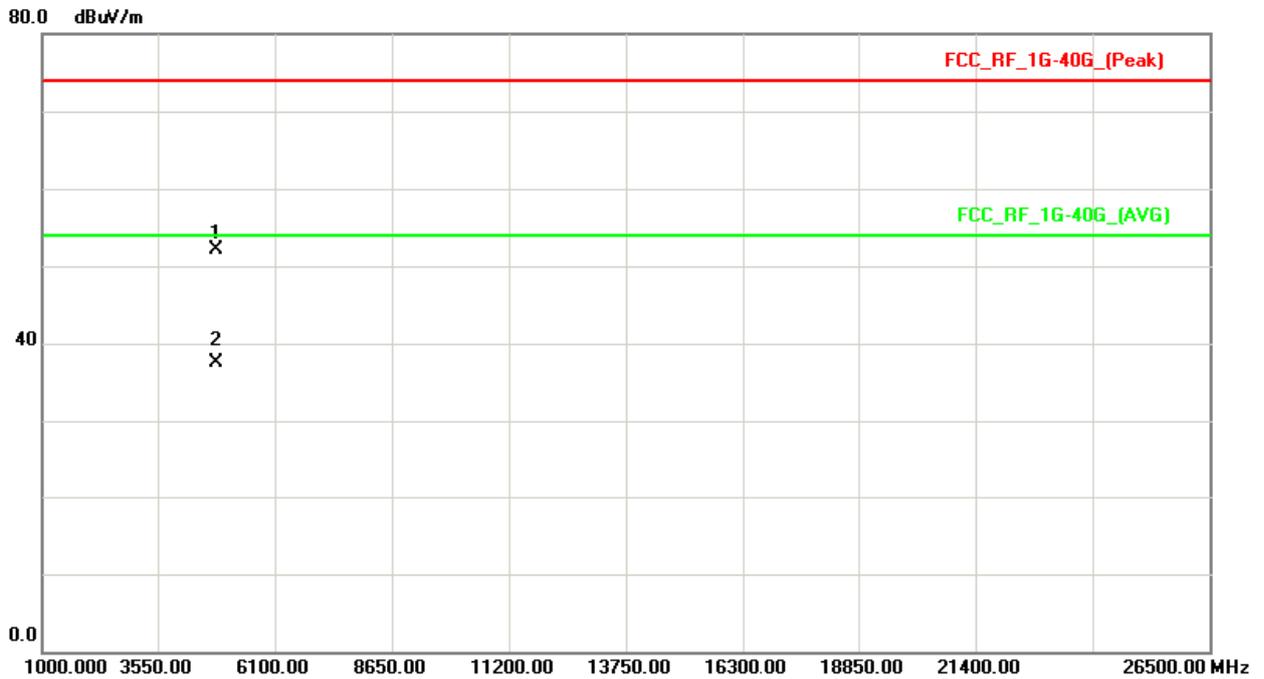
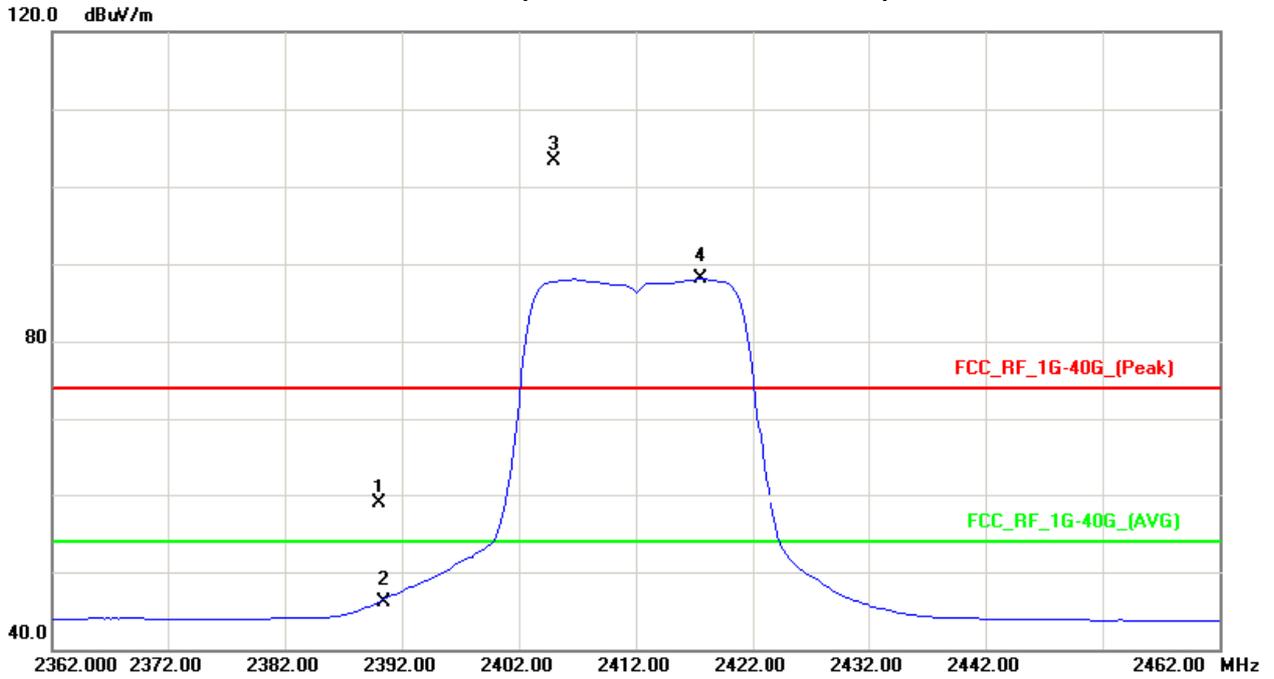
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	26.64	13.75	32.28	58.92	46.03	74.00	54.00	X/E
2405.00	V	70.97	55.80	32.26	103.23	88.06			X/F
4823.95	V	45.89	31.24	6.19	52.08	37.43	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
 “X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHZ		

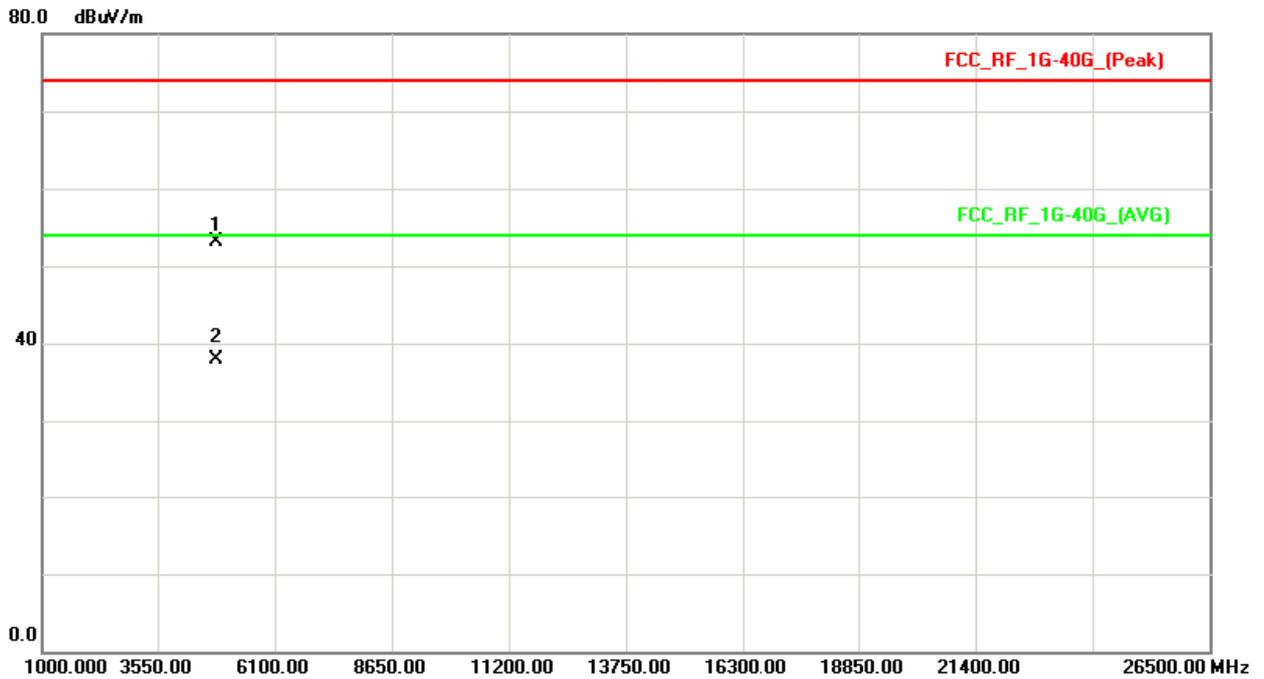
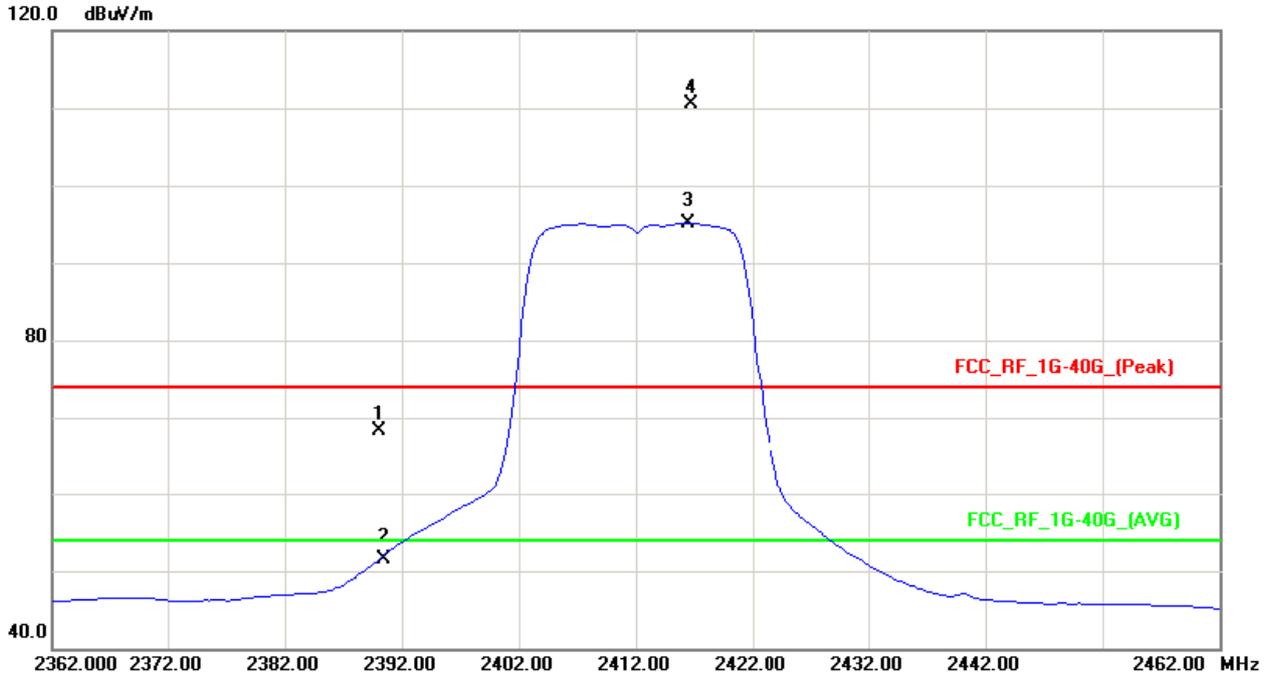
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	35.93	19.22	32.28	68.21	51.50	74.00	54.00	X/E
2416.75	H	78.33	62.84	32.25	110.58	95.09			X/F
4824.10	H	46.82	31.69	6.19	53.01	37.88	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

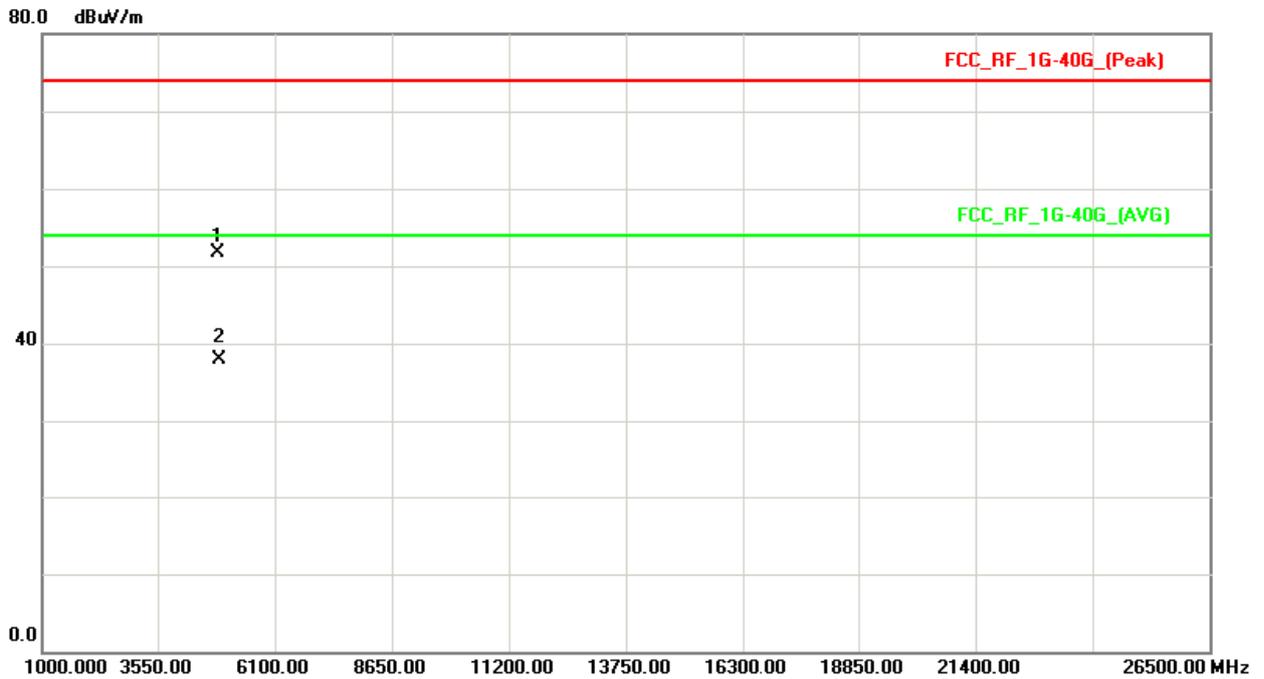
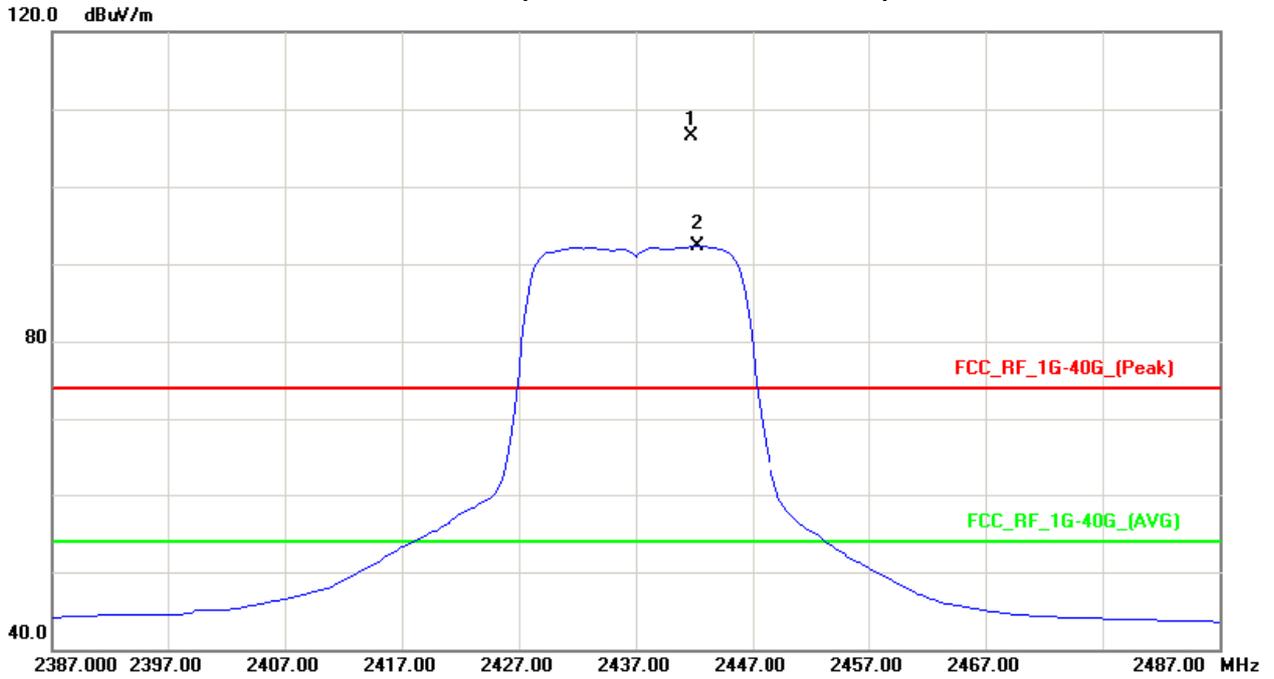
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2441.75	V	74.20	60.04	32.23	106.43	92.27			X/F
4873.90	V	45.24	31.56	6.39	51.63	37.95	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
 “X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

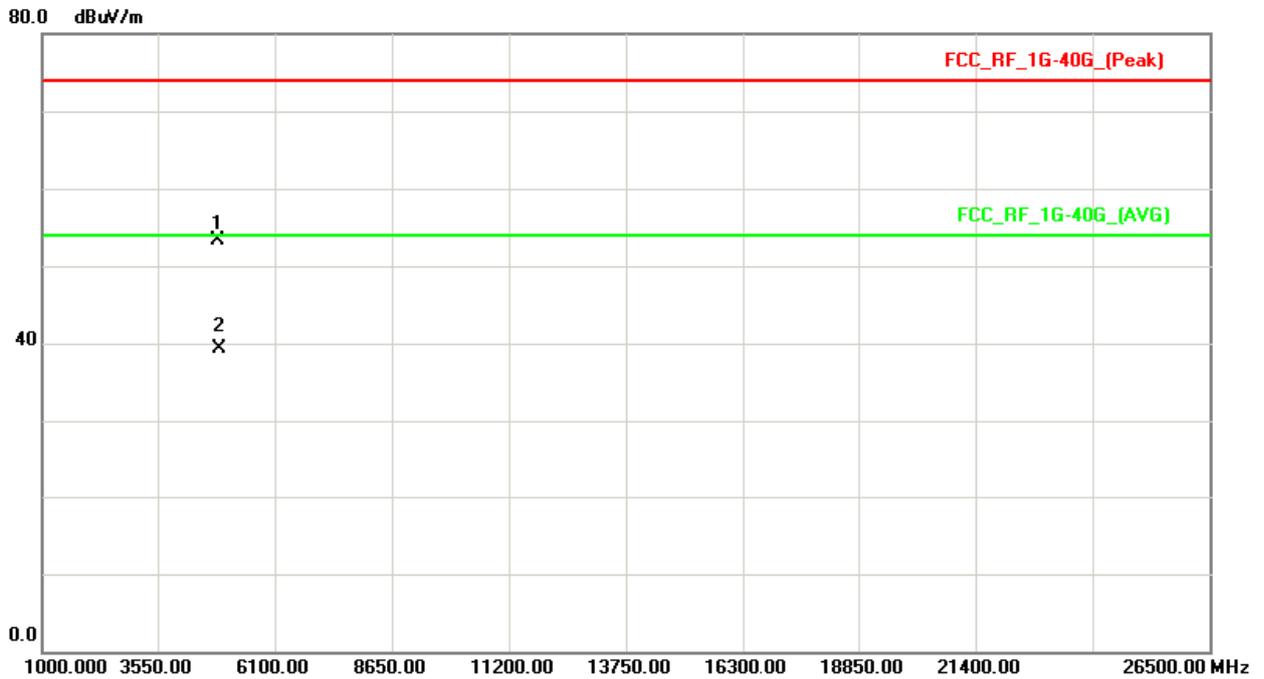
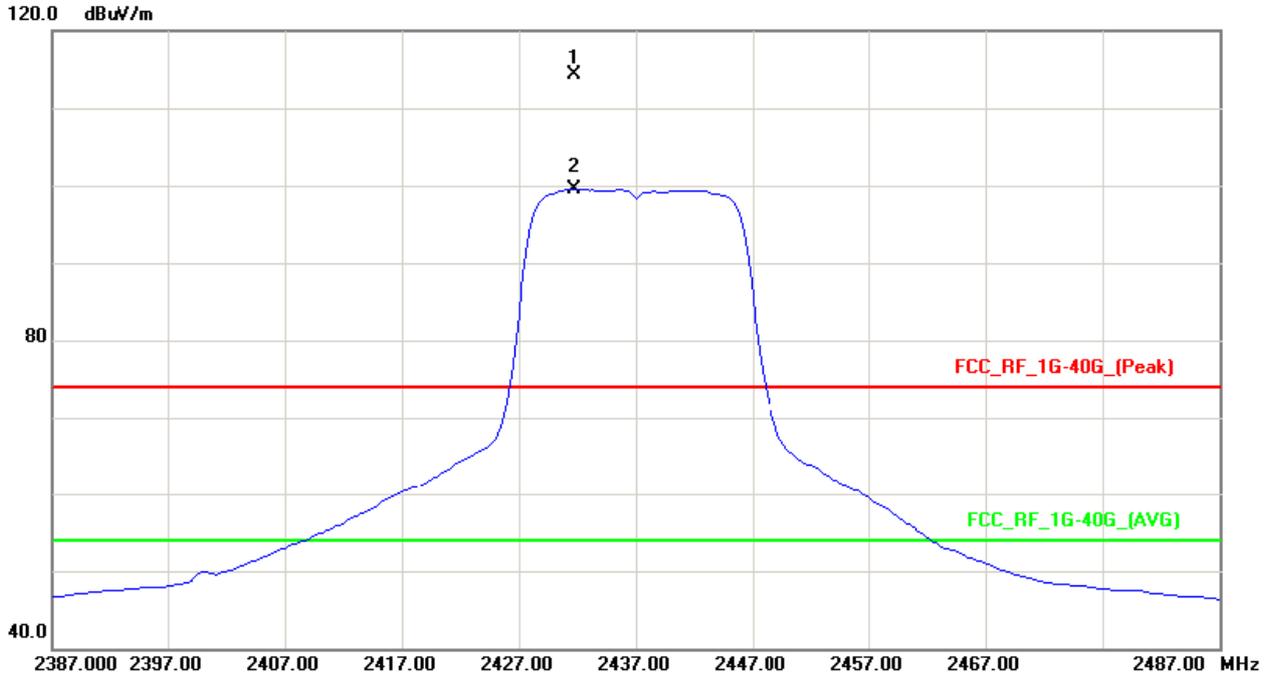
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2431.75	H	82.01	67.28	32.24	114.25	99.52			X/F
4874.04	H	46.89	32.84	6.39	53.28	39.23	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHZ		

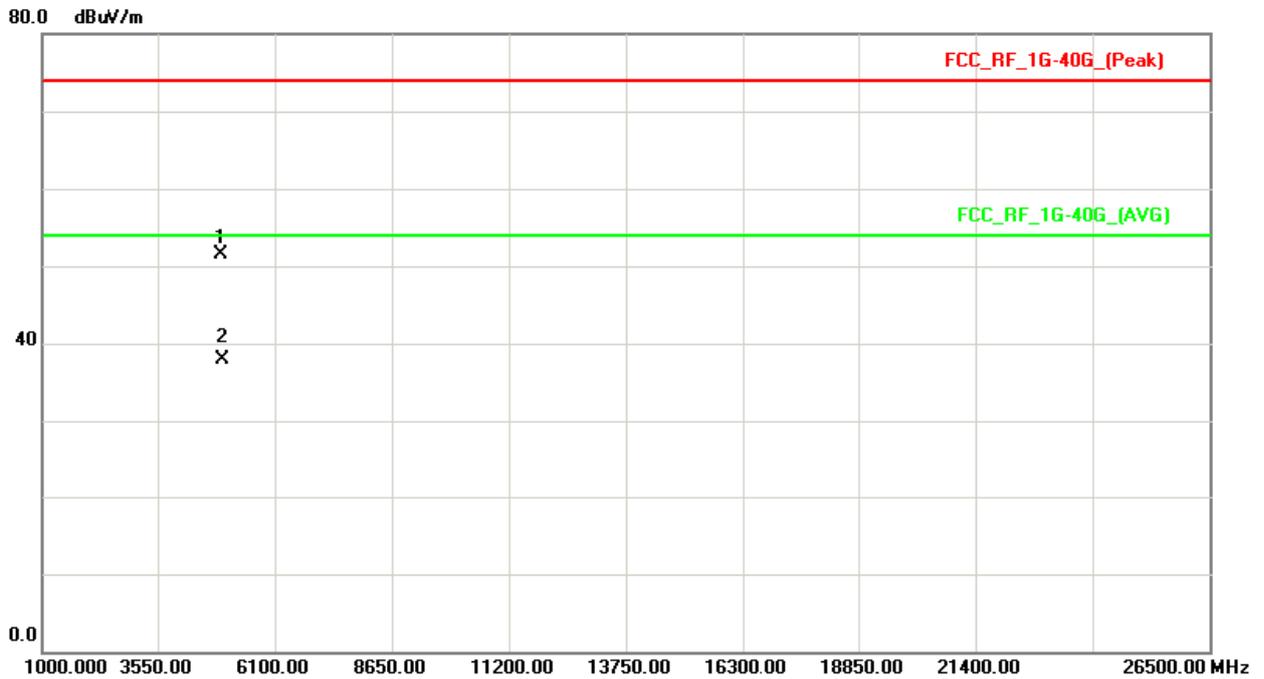
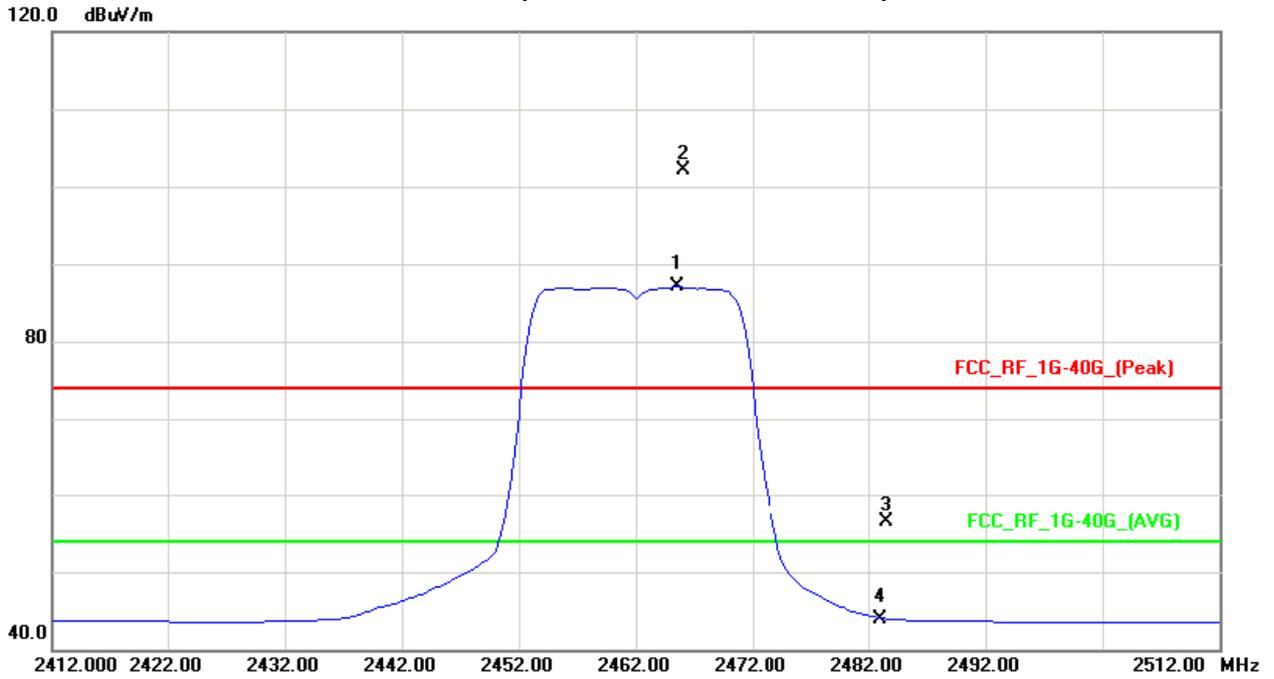
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2466.00	V	69.94	54.83	32.20	102.14	87.03			X/F
2483.50	V	24.35	11.83	32.17	56.52	44.00	74.00	54.00	X/E
4924.12	V	44.89	31.27	6.59	51.48	37.86	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

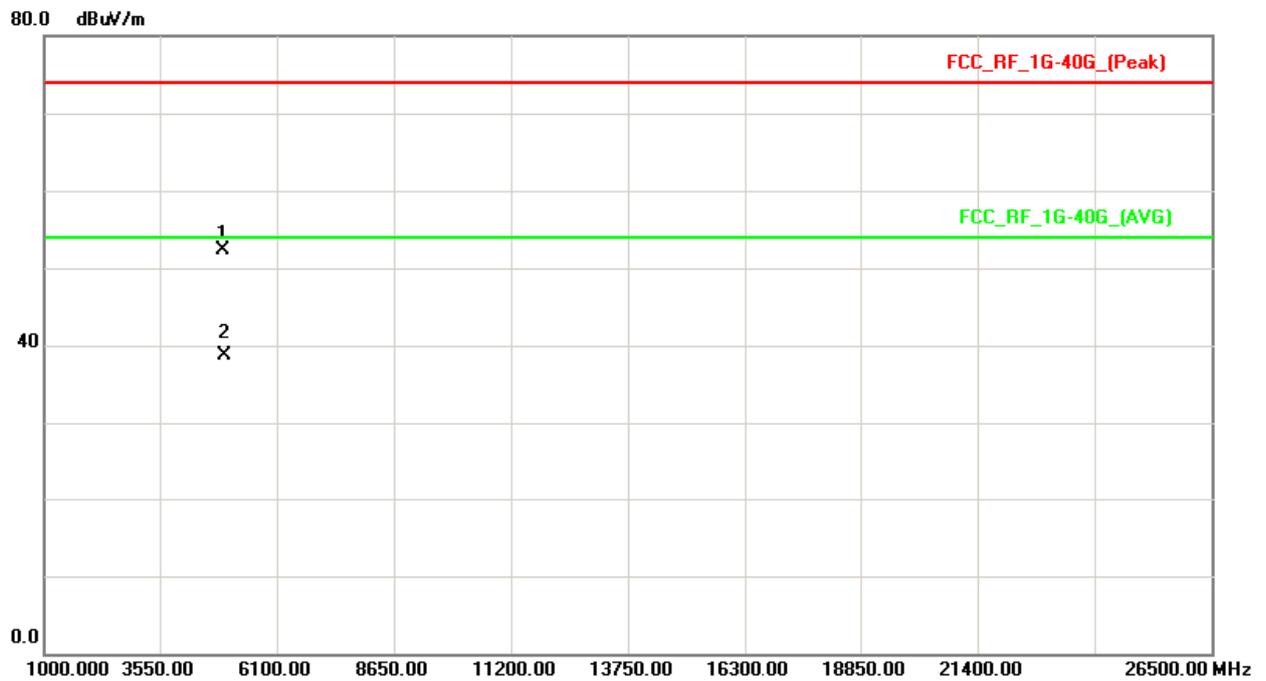
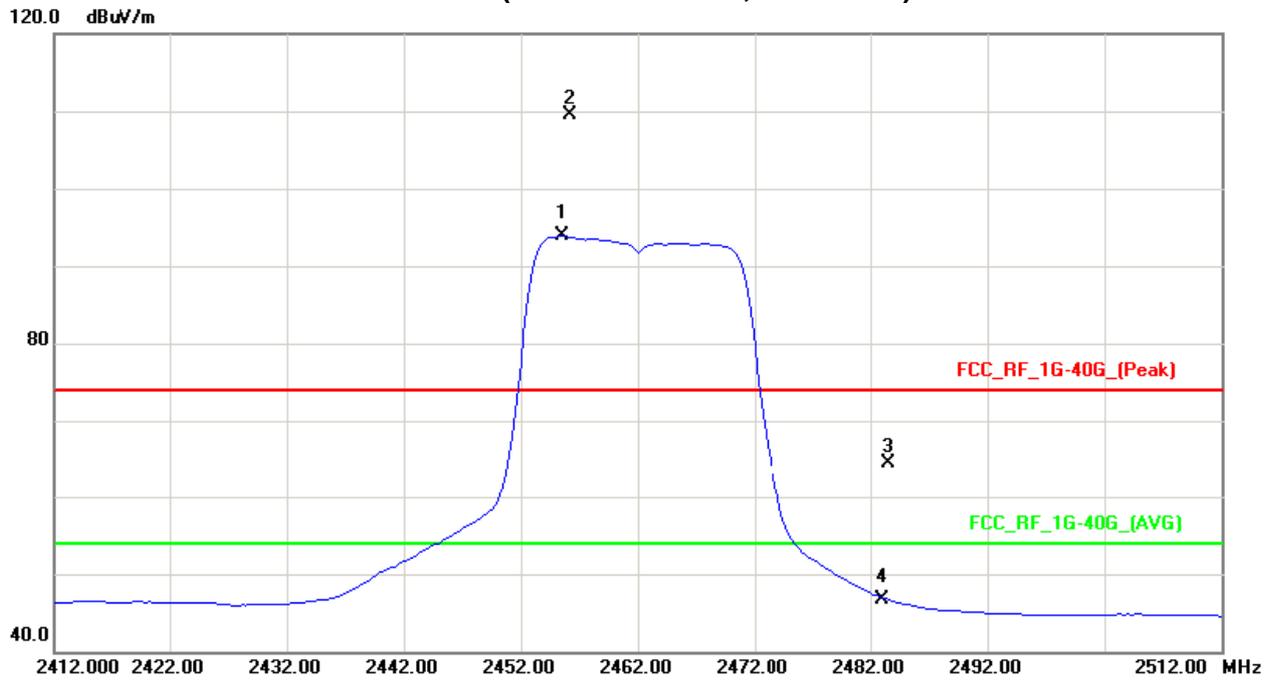
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2456.25	H	77.21	61.60	32.21	109.42	93.81			X/F
2483.50	H	32.25	14.55	32.17	64.42	46.72	74.00	54.00	X/E
4924.05	H	45.63	32.20	6.59	52.22	38.79	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz – Integral Antenna		

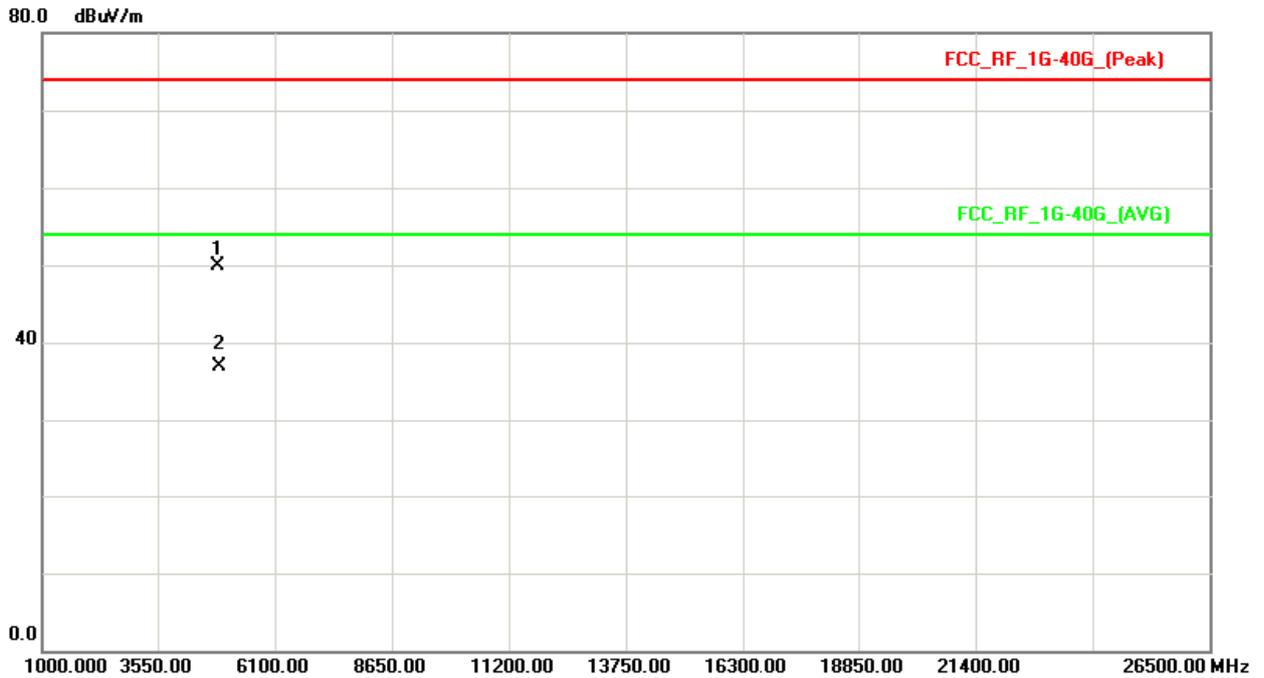
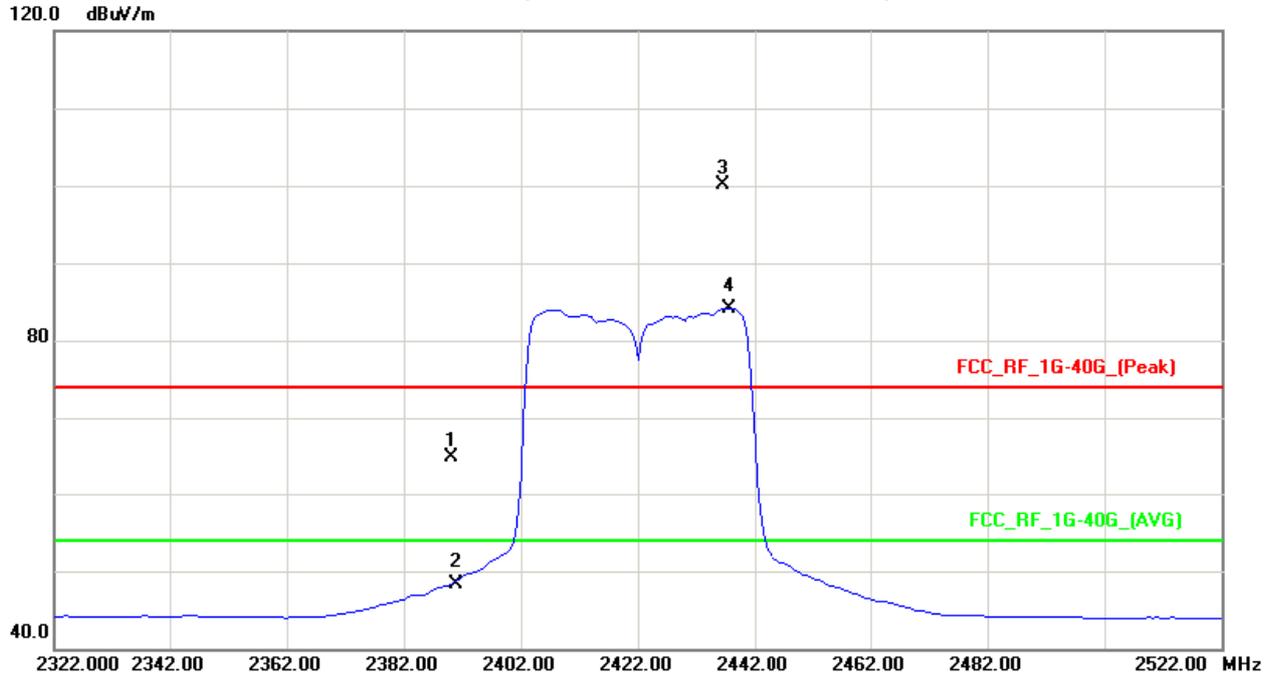
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	32.62	15.94	32.28	64.90	48.22	74.00	54.00	X/E
2436.50	V	67.83	51.96	32.23	100.06	84.19			X/F
4843.85	V	43.58	30.65	6.27	49.85	36.92	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH03 (Above 1000 MHz, Vertical)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHZ		

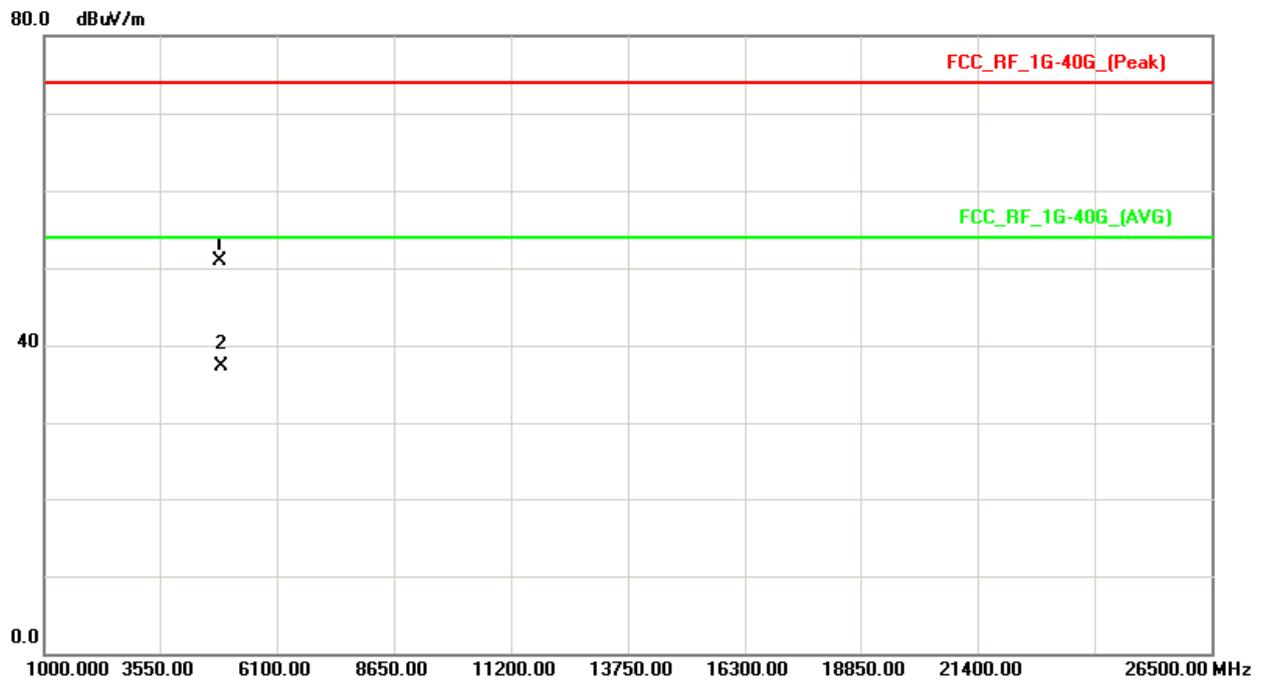
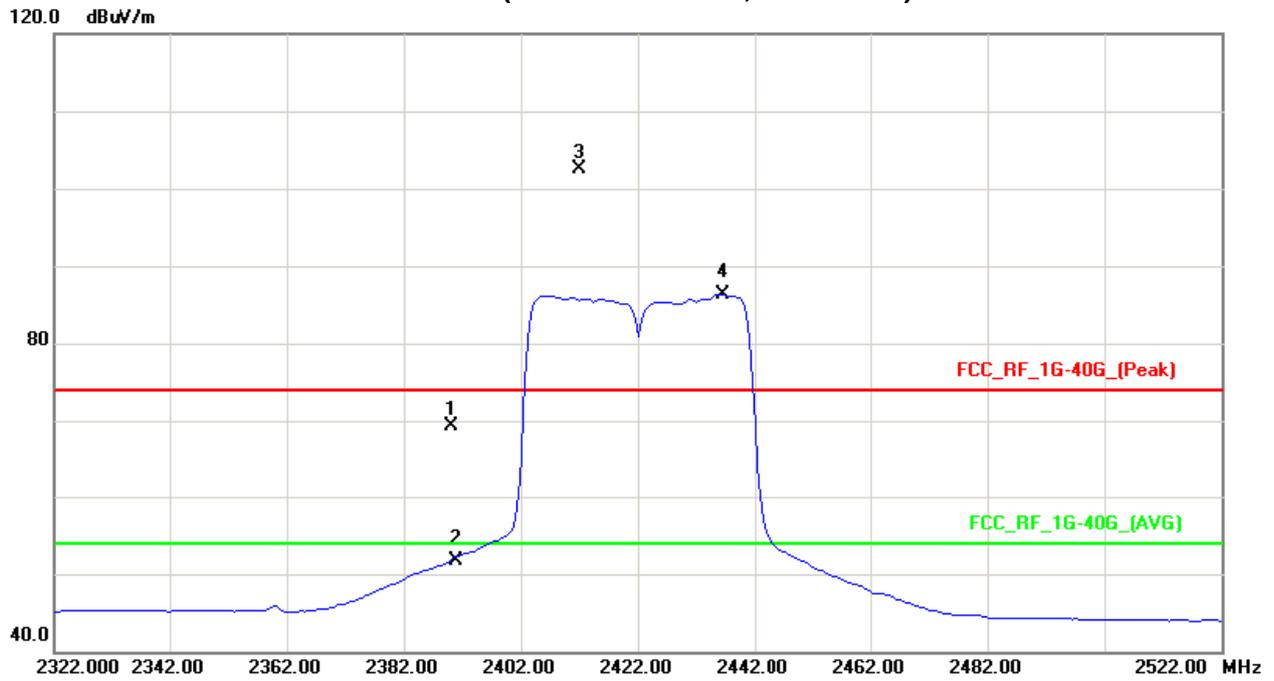
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	36.95	19.47	32.28	69.23	51.75	74.00	54.00	X/E
2412.00	H	70.23	54.05	32.26	102.49	86.31			X/F
4844.18	H	44.54	31.06	6.27	50.81	37.33	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH03 (Above 1000 MHz, Horizontal)





EUT :	300Mbps Mini Wireless Router	Model Name :	WS322
Temperature :	25 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2421.50	V	70.54	54.41	32.24	102.78	86.65			X/F
4874.24	V	44.82	31.06	6.39	51.21	37.45	74.00	54.00	X/H

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency .“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna